

AMERICAN VETERINARY REVIEW.

JULY, 1900.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

TUBERCULOSIS—INCUBATIVE STAGE—AGE OF LESIONS.—

There are two questions related to the disease of the day which deserve close attention and which have not received until now any scientific satisfaction. The former has, besides its importance from a scientific point of view, a great value in a sanitary and commercial aspect. The latter has not yet been determined experimentally, and consequently the appreciation of the character of the lesions has almost been entirely empirical, their age being more or less correctly estimated by their extent.

The question was presented a short time ago before the Société Vétérinaire Pratique in Paris and commanded sufficient attention to obtain the formation of a commission to carry on experiments to solve the problems as far as possible. As a member of the Société, I had the honor to be appointed on the commission, and thus gained a most advantageous opportunity to obtain valuable information for the REVIEW at first hand.

The programme laid out for the experiments consists in the purchase of twelve cows, which will be divided into five lots and submitted to the following experimentation: After being all submitted to careful tuberculin test, four will be infected by eating food, solid or liquid, containing tuberculous matter; four will be contaminated by inhalation of tuberculous powders; two will receive an injection of emulsion of tuberculous culture

in the teats ; one will receive it in the trachea ; one into the jugular.

The animals carefully watched, and the progress of the infection and of the development of the disease being minutely recorded, they will be killed at various periods and the post-mortem made at Alfort in the presence of the entire commission. The first killing will be made after 30 days, the second after 15 more, say 45 days, the remainder at a later date decided by the commission.

Yesterday the first meeting took place, at Pouilly-les-fort, a little place close to Paris, already known to the profession on account of the experiments made there for several years by Pasteur, who demonstrated to the world the efficiency of the preventive vaccination against anthrax. The first part of the experiment was carried out. Profs. Nocard and Maussée, of Alfort, prepared and administered the various preparations of tuberculous substances. The contamination by inhalations was very interesting, the operation demanding the greatest care for fear of infection to those who gave it as well as to those looking on. With mouth and nostrils protected by gauze and wadding, Prof. Nocard sent tuberculous pulverizations for five and ten minutes into a long fumigation bag, through which the animals were made to breathe. Every part of this first seating of the commission was minutely carried out in the presence of some 30 civil and military veterinarians, who, notwithstanding a pouring rain, watched all the steps of this contamination.

We will take good care that our readers will receive information relating to the results of this experiment as early as they will be known, and as quickly as they will be established.

* * *

HEREDITY OF ROARING.—This question is pretty firmly admitted and answered in the affirmative ; at least it is the opinion of many good veterinarians. And yet there are not a few who, if not ready to ignore entirely the idea of heredity, are not willing to give it the influence that is generally admitted. It is not surprising then to see the subject occupy-

ing the attention of such men as Nocard, Lavalard, Cagny, Barrier and Labat, who discuss it at the Société Centrale and publish their opinions to the effect of throwing light on the question, "Is Roaring Hereditary or Is it Not?" as it is of great importance for the breeder. There are so many cases recorded favorable to both sides of the question, that the answer is very difficult to give. Why should "Ormonde," himself a roarer, produce roarers when in England and when taken to America *not have one* roarer to his credit? Why should other similar cases occur of confirmed roarers, even to being obliged to carry tracheotomy tubes, as a stallion by the name of "Star" did, and yet have perfectly sound products? And, again, the pathological origin of the symptoms is interesting. The causes of roaring (of course we mean chronic roaring) are numerous. But among them none is more important than laryngeal paralysis, which is stated to act in 96 per cent. of the cases, and if it can be due to traumatism, pressure, neoplasm, etc., in the greatest majority of cases it is the result of nervous alterations of microbial origin, microbial intoxication.

Heredity does not, in the eyes of Prof. Labat, play the important part heretofore given to it, and for him the subject ought to be considered as follows:

(1) It is not impossible for roarers, by transferring defective conformation to their products, to have them roarers at birth.

(2) In the great majority of cases, chronic roaring is due to laryngeal paralysis, and animals affected with it do not transmit the disease itself, but a real tendency to acquire it; it is the *heredo-predisposition* to roaring.

(3) Analysis of the causes of roaring has shown that a few among them can be transmitted by way of reproduction, viz.: vices of conformation and specially predisposition to paralysis of the larynx. Consequently all chronic roarings are not hereditary; *there are no hereditary roarings*.

(4) *Heredo-predisposition* forms the most important factor in the genesis of chronic roaring; it shows itself as the prepar-

atory and predisposing condition in most cases of laryngeal paralysis, which is undoubtedly the most frequent cause of the disease.

For Prof. Labat, then, and it is an opinion which seems to be gaining ground, heredity exists for some cases, such as in those resulting from vices of conformation—there it is an indirect heredity—but it does not exist for roaring due to other causes, such as paralysis of the larynx. In those there is only a heredo-predisposition which must be prevented.

Infectious diseases playing the greatest part in the causation of roaring, its prophylaxy seems to demand the prevention of their evolution.

Another laurel for microbiologists to obtain. Who some years ago would have dreamt of such therapeuty for roaring?

* * *

TUBERCULOSIS—OBLIGATORY DECLARATION.—This sanitary measure, so important in veterinary sanitary medicine, and which in that science covers all contagious diseases, seems to be different in human medicine, at least, in some countries. In France this measure has recently been the object of action at the hands of the Académie de Médecine in Paris, thanks to the action of Professor Grancher, who succeeded in carrying a motion to the effect "that tuberculosis be entered in the list of diseases for which obligatory declaration is imposed."

This was obtained after a discussion before the same body of physicians in relation to a similar admission of measles in the same list, when Professor Grancher showed, figures in hand, that when the six great zymotic diseases are considered, variola, typhoid fever, diphtheria, scarlatina, etc., the conclusion is arrived at that it is impossible, with, perhaps, diphtheria excepted, to tell the part of disinfection in the reduction of mortality.

This being the case, Grancher asks why tuberculosis—the most fatal of all diseases—is not first among the diseases for which declaration is obligatory?—no doubt on account of sentiments to be respected, it is true, but, nevertheless, secondary. It is gener-

ally admitted that, among members of families, tuberculosis is a disease that kills, but without being named, and physicians, accomplices of the pious lie, do not dare to speak or act.

Professor Grancher has submitted to the same influence; twice he went back on what was his scientific conviction. In 1893 he wanted to ask the consultative committee of hygiene to make the addition to the list, but met with such objection that he did not dare to propose it.

In 1898 he was more daring, but was met with a "non possumus," which resulted in another failure. Roux alone stood with him.

To-day the situation differs—public opinion acts. It understands the serious nature of the danger that threatens all families, rich or poor, and the truth is asked—as well as measures of prophylaxy are required.

This measure, however, is already recommended by the extra parliamentary commission on tuberculosis of the last Congress of Berlin, and the unanimous vote which was carried at the last meeting of this commission will certainly have for result the admission of tuberculosis in the list of contagious diseases for which the declaration will be obligatory. There is no doubt that this will prove a great means of prevention to the spreading of the disease in the human family, as it does for all the other contagious diseases submitted to the same requirement.

A. L.

GET READY FOR DETROIT.

In just two months veterinarians from almost every State in the union will be hurrying to this beautiful city of the Northwest to attend the thirty-seventh annual meeting of the American Veterinary Medical Association, that magnificent representative of the profession of the Western continent. The command "get ready" signifies not only the provision for the care of your practice during your absence, the packing of your grip and the securing of your railroad tickets, but it means that you should "get ready" to contribute your quota to the pro-

gramme of the three days' meeting. The national association represents every phase of the legitimate science, and every man in all its varied departments will find a place where his talents will be welcomed and where his assistance will be appreciated.

If his fortunes and trend have led him along the paths of sanitary medicine, he can find no opportunity superior to this to gain the latest and most advanced thought in his department, for at these meetings sanitary medicine is allotted a large range and the brightest men of the land meet for the exchange of observations and opinions.

If, on the other hand, he is devoted to the practice of veterinary medicine, combatting the every-day diseases of domestic animals, he will find here a forum where the most successful men of the day meet for the enlarging of their own capacity by adding the knowledge imparted by their colleagues in the reading and discussion of papers upon practical subjects. Since it is impossible for the veterinary practitioner to divorce surgery from the routine of his daily work, it is necessary that he add to his other qualifications that of an adept surgeon—not only for the performance of minor operations, but the successful undertaking of those more pretentious procedures which the human physician would dispose of by the recommendation of some well-known specialist. Modern antiseptic veterinary surgery is a very different problem from the attempts of a few years ago, and he who would keep pace with the times must be alive to the rapidly unfolding methods and discoveries. The REVIEW is doing its utmost to keep its readers abreast of the progress that is being made along these lines, and we are pleased to know that its efforts are being thoroughly appreciated by the veterinarians of the country. The "Department of Surgery," conducted in each issue by the Drs. Merillat, of Chicago, is very gratefully received all over the country, if we may judge by the expressions of scores of correspondents. The painstaking compilations which they are producing in the midst of active practical work is worthy of much commendation, while the character of their productions is of a high order and

thoroughly reliable. But even such efforts as these do not take the place of the actual demonstration of modern surgical methods, and in no way can this be so well accomplished as at the surgical clinics held in conjunction with the great national gathering, where the most noted surgeons of the country will have the opportunity to illustrate major and minor operative surgery. The Secretary assures us that the local veterinarians will secure any class of patient which will be required to demonstrate the various popular operations that will be undertaken, and asks that those who expect to take part in the clinics will at once notify him, in order to secure the requisite subjects. We sincerely hope that this section of the programme will receive the encouragement that its importance justifies, as we have heard so many expressions as to its helpful nature.

While we are continually advancing in the field of pathology through our great Bureau of Animal Industry and the experiment stations of the various States, in no way can the real extent of this vast subject be so thoroughly demonstrated as by the gigantic annual exhibit made by the progressive representatives of these institutions. The two exhibits that have been given have caused all to wonder at their magnitude and interest, and it is reasonable to expect that with the experience already gained the display at Detroit will be greater than either of its predecessors.

Still further, if the veterinarian is engrossed in the art of teaching, he not only will be in possession of all the varied branches above detailed, but will be enabled to engage in the deliberations of the Association of Faculties as to the best methods to employ; and if he be a member of any of the State examining boards the same association includes among its membership representatives from such boards, where by a union of interest and exchange of thoughts the most beneficent results may be obtained.

While such an intellectual opportunity should cause every earnest man to lay aside his art for the second week in Sep-

tember for the benefit of his science, it may be made in addition a glorious season of recreation, convivial pleasure, and delightful association, conjoining the beauties of grand scenery *en route* with pleasant diversions at the convention city. The REVIEW will keep you posted in the meantime as to the developing programme ; but, whatever you do, "Get Ready for Detroit."

THE officers of the New York State Veterinary Medical Society are putting forth strong efforts to make the next annual meeting, which occurs at Ithaca the week following that of the American Association in September, a strong representative gathering of the veterinarians of the Empire State. With such a populous territory, with such a large number of men of national reputation, both in the domain of State medicine and the field of practice and surgery, it would seem that nothing were lacking except thorough organization and stimulated interest. Dr. W. L. Williams, chairman of the Committee of Arrangements, furnishes REVIEW readers this month with a superficial outline of the plans which are under way for the approaching meeting, and we trust that each one who can possibly reach the convention city will avail himself of the opportunity presented of making the State society the greatest in every sense of any similar organization in this country. There is not one who will not be more than repaid for his time and expense in attending, besides feeling that he has done his duty to the profession whose interest it is the function of the Society to foster and enlarge. Send to Secretary C. D. Morris, Binghamton, N. Y., for an application blank, or go to Ithaca and present your petition in person.

THE bill to create a Veterinary Corps in the United States Army failed to come to a vote in the House of Representatives prior to adjournment. While the veterinarians of the country, and particularly the Committee of the American Veterinary Medical Association, who worked with a vim and a unanimity that surprised the legislators, are doomed to a postponement in

the realization of their just rights, they have awakened an interest in the cause which will be practically irresistible at the next session. The question should be thoroughly gone over at the coming meeting of the A. V. M. A., and a plan of campaign agreed upon that will offer the best promise of success next winter. The REVIEW will present the subject with some facts connected with it in its August issue, so that it will be fresh in the minds of the delegates to the Detroit Convention.

At a meeting of the Board of Regents of the State of New York, held at Albany last month, it was voted that 24 counts be required for the veterinary student certificate for matriculates prior to Jan. 1, 1902. We congratulate the Board upon its conservative and sensible action, as it will enable the Empire State to keep well in advance of the other States in higher education and yet not place a prohibitive barrier in front of her schools.

If Secretary Merillat fails to "show up" at Detroit with the books of the Association of Faculties, as was the case at New York, he will be very apt to suffer impeachment for high treason. As the meeting will be held close to the home of President Stalker there will scarcely be any question of his presence.

ORIGINAL ARTICLES.

TEXAS FEVER.

EXPERIMENTS MADE BY THE MISSOURI EXPERIMENT STATION
AND THE MISSOURI STATE BOARD OF AGRICULTURE, IN CO-
OPERATION WITH THE TEXAS EXPERIMENT STATION, IN
IMMUNIZING NORTHERN BREEDING CATTLE AGAINST TEXAS
FEVER FOR THE SOUTHERN TRADE.

By J. W. CONNAWAY, VETERINARIAN MISSOURI EXPERIMENT STATION,
AND M. FRANCIS, VETERINARIAN TEXAS EXPERIMENT STATION.

(Continued from page 180.)

Bull 9. Weight 795 lbs. when received; gained 95 lbs.

Fever on 13th, 14th and 15th days following first inoculation, 103.8 to 105.6° F. Animal kept in good condition; no prolonged fever period. Shipped to Texas in good condition. Temperature Jan. 9th, 105.8°. Jan. 11th, 105°; which appears to be a secondary reaction from the inoculation. Feb. 25th, had ticks; shows no sickness. April 24th, no sickness to date.

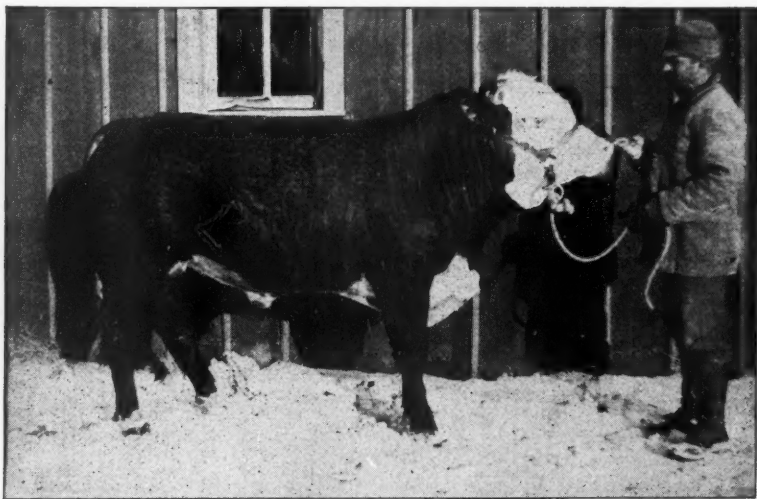


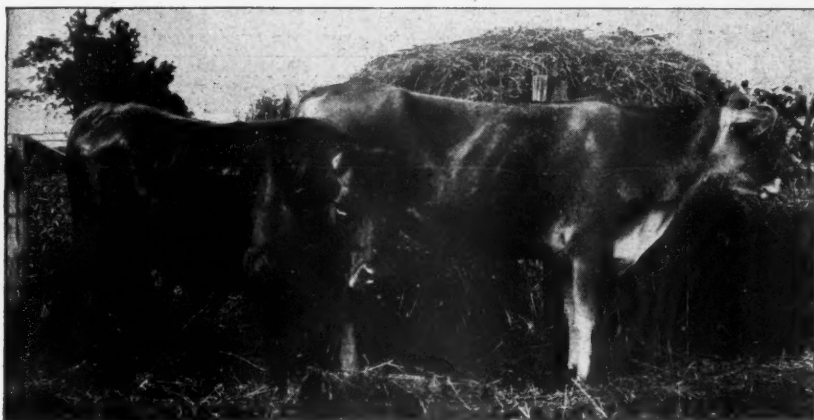
FIG. 9.—A TWO-YEAR-OLD BULL, WEIGHT 1250 LBS., INOCULATED DURING THE WINTER OF 1898, AT MISSOURI EXPERIMENT STATION.

Aug. 15th, has carried ticks through the summer and has done considerable service. Is now in good health. Reported well Oct. 1st.

Bull No. 30. Weight 815 lbs.; gained 135 pounds. Inoculated Nov. 29th with 1 cc. blood from an immune Texan steer, and reinoculated Dec. 8th with 2 cc. from a recovered native. No rise of temperature up to time of shipment. Jan 9th, three days after reaching Corpus Christi, had temperature of 103.4°. Appeared sick on Jan. 11th, temperature 104°. This may be a delayed reaction from the inoculation, brought out by shipping, or simply shipping fever. Jan. 20th, arrived at Laureles ranch, driven out 25 miles from Corpus Christi. Feb. 10th, found ticks. Feb. 15th, appears sick. Feb. 25th, carrying ticks and

appears well. April 24th, has done well. May 16th, turned into pasture with cows. June 3d, sick; temperature 108°F. , 7.30 A. M. June 5th; died of Texas fever, passed red water before death. Post-mortem showed enlarged spleen and red water in bladder.

Bull No. 6. Weight when inoculated 823 lbs.; gained 117 lbs. before shipping. Had a slight reaction on 7th to 10th days following second inoculation; had chill at beginning of attack, was off feed and dumpish. Recovered appetite in a few days,



was shipped in good condition. This animal had fever on arrival in Corpus Christi; Jan. 9th, temperature 104.6° , either from shipping fever or a secondary reaction from inoculation. Jan. 20th, arrived at ranch 25 miles from Corpus Christi. Feb. 10th, found ticks. Feb. 15th, this bull was sick. Feb. 25th, has recovered and is carrying ticks, temperature at 4 P. M., 103° . April 24th, appears to be free from ticks; no illness observable. May 13th, was put in pasture with cows, was in strong, vigorous condition; had been well infested with ticks. June 4. Died from an acute attack of Texas fever.

A discussion of these relapses appears in the concluding section.

TOD BULLS: TABLE SHOWING GAIN OR LOSS IN LIVE WEIGHT, AND DAILY TEMPERATURE RECORDS.

The greater number of the temperatures recorded in the following tables were taken between 10 and 11 o'clock A. M., and are therefore somewhat higher than early morning temperatures. The normal in these records may be taken to range from 101 to 103° F. In the discussion of this experiment, 103.8° F. is about the lowest temperature included in a "fever period."

GROUP I.		Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.
		1	3	2	13	7	14	17	12	19	15	26	4	21	18	
Weight when received, lbs...		272	285	300	382	390	390	410	412	428	455	480	380	415	445	
Weight when shipped, lbs...		310	310	290	400	390	400	485	430	475	775	500	425	445	530	
Gain or loss		+38	+25	-10	+18	0	+10	+75	+18	+49	+20	+20	+45	+30	+85	
Days after Inoculation.																
Nov.	7	102.	103.	103.	102.5	.....	102.8	102.5	104.	102.5	103.	102.5	103.5	.....	.....	.....
	11	102.9	103.2	103.1	102.8	104.8	103.	102.9	104.	104.5	104.5	103.2	103.6	104.4	101.5	
	15	106.4	103.4	105.4	103.2	104.8	103.2	104.2	105.4	104.8	106.4	103.3	104.2	104.1	103.	
	16	105.4	104.	104.4	104.	104.	103.	105.2	107.2	103.8	103.6	103.5	104.1	.....	104.2	
	17	105.6	104.	105.6	103.9	105.8	103.8	104.	107.4	104.1	103.5	106.2	104.5	.....	103.	
	18	106.2	106.	103.9	106.5	104.4	104.2	105.	105.8	105.	103.8	103.4	104.	104.	104.1	
	19	105.3	106.	105.6	108.4	.....	103.7	104.	107.3	.....	104.	103.5	.....	.....	103.2	
	20	103.5	102.4	105.7	107.2	103.6	104.	104.5	103.	104.5	103.4	103.4	103.4	103.6	103.2	
	21	104.2	103.5	105.7	104.	103.3	104.4	105.5	104.5	104.8	104.4	102.7	103.9	104.2	104.3	
	23	103.4	103.3	104.6	102.	104.1	103.8	104.8	104.9	103.4	102.	104.4	103.8	102.8	102.6	
	24	103.1	.....	105.1	104.5	.....	.....	102.8	104.	.....	.....	.....	.....	.....	.....
	25	104.	102.8	104.6	104.8	105.8	102.2	102.8	103.	106.	103.	104.2	105.8	102.1	101.6	
	19	102.	103.	104.	104.1	103.4	103.2	103.4	104.5	102.3	102.8	103.5	103.8	102.3	103.6	
	26	102.2	105.	101.	101.2	103.4	101.6	102.2	104.8	102.	102.	102.	102.2	104.	102.4	
	27	103.	103.5	103.4	104.2	103.5	102.8	105.	105.	102.	105.	103.4	102.	103.2	103.2	
	30															

TOD BULIS: TABLE SHOWING GAIN OR LOSS IN LIVE WEIGHT, AND DAILY TEMPERATURE RECORDS.—Continued.

Dec.	GROUP I.																											
	Bull.	1	3	Bull.	2	Bull.	13	Bull.	7	Bull.	14	Bull.	17	Bull.	12	Bull.	19	Bull.	15	Bull.	26	Bull.	4	Bull.	21	Bull.	18	
25	.....	.....	.....	.....	.....	104.5	.....	104.1	103.3	103.5	103.8	104.7	103.6	103.9	103.5	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1
26	102.1	101.8	103.4	105.5	.....	.....	105.5	103.9	103.5	102.2	.....	105.8	.....	103.	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3
27	103.2	102.3	103.6	102.5	103.2	103.9	103.1	103.7	102.9	106.2	104.8	102.8	102.	104.8	102.	104.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	103.6	103.3	104.5	103.	105.2	103.6	103.5	103.6	105.6	102.5	104.	103.3	103.6	104.	103.6	105.6	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1
30	102.	103.6	103.6	100.6	104.2	104.	102.1	98.4	104.2	103.	101.6	104.	102.1	101.6	104.	102.1	101.6	104.	102.1	101.6	104.	102.1	101.6	104.	102.1	101.6	104.	102.1
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	103.	103.	102.4	102.2	103.4	104.4	102.3	102.6	103.1	103.	102.6	103.1	102.6	105.	103.1	102.6	105.	103.1	102.6	105.	103.1	102.6	105.	103.1	102.6	105.	103.1	102.6
33	104.2	101.6	104.2	104.	105.	103.6	101.8	103.4	103.2	102.6	102.4	105.8	104.	105.8	104.	105.8	104.	105.8	104.	105.8	104.	105.8	104.	105.8	104.	105.8	104.	105.8
34	104.3	105.9	105.8	102.5	104.7	103.5	.....	105.4	102.8	.....	102.	105.4	104.2	105.4	104.2	105.4	104.2	105.4	104.2	105.4	104.2	105.4	104.2	105.4	104.2	105.4	104.2	105.4
35	104.2	104.6	105.4	103.6	104.2	103.8	103.	103.5	102.4	102.	105.6	102.4	102.	105.6	102.4	102.	105.6	102.4	102.	105.6	102.4	102.	105.6	102.4	102.	105.6	102.4	102.
36	103.8	105.	105.2	103.	103.	103.	103.5	105.4	102.	103.	105.4	102.	103.	105.4	102.	103.	105.4	102.	103.	105.4	102.	103.	105.4	102.	103.	105.4	102.	103.
37	103.	104.2	104.4	103.8	102.	102.8	103.2	103.2	102.	103.	102.2	103.	102.2	103.8	102.2	103.8	102.2	103.8	102.2	103.8	102.2	103.8	102.2	103.8	102.2	103.8	102.2	103.8
38	102.6	103.	104.2	102.6	102.6	102.6	103.	103.4	104.2	102.5	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6
39	101.6	103.8	104.	102.	102.5	102.	102.6	101.8	102.4	103.6	102.8	104.8	106.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6
40	103.	103.	103.6	102.6	103.	102.4	104.1	102.6	102.5	104.2	105.4	104.8	106.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6
41	103.4	102.4	104.4	105.4	103.4	102.4	104.7	103.7	102.4	104.8	106.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8	103.4	103.6	103.8	102.8
42	102.	101.2	103.	101.2	102.6	101.	103.	101.6	102.4	104.	105.	103.	104.	105.	103.	104.	105.	103.	104.	105.	103.	104.	105.	103.	104.	105.	103.	104.
43	101.	102.8	102.6	103.2	103.8	101.2	101.8	102.6	102.6	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1	103.2	104.1
44	103.	104.	103.6	101.6	104.2	102.4	104.	102.	102.4	105.	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8	102.6	103.8
45	103.6	102.5	103.8	103.8	102.	103.7	103.4	103.8	102.2	104.	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4	101.8	102.4
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TOD BULLS.		Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.	Bull.
GROUP II.		8	22	20	23	24	16	10	28	25	5
Weight when received, lbs.....		370	435	550	680	365	402	480	498	507	600
Weight when shipped, lbs.....		380	525	610	710	415	490	585	545	545	680
Gain or loss.		+10	+90	+60	+30	+50	+88	+105	+47	+38	+80
		Days after Inoculation									
Nov.	11	.....	106.	103.4	.....	.....	102.2	..	.....	103.4	103.3
	15	103.	104.	103.6	102.	104.6	103.2	104.	104.	104.	104.
	17	103.8	103.2	102.	.....	103.5	102.	.....	103.8	103.3	.....
	18	104.	103.	102.7	102.	102.8	101.1	102.	103.4	103.	103.
	20	103.5	102.6	102.3	100.9	103.4	102.4	101.9	101.8	102.8	101.9
	21	104.4	104.7	102.8	.....	102.3	103.4	103.8	104.3	101.1	.....
	23	103.	102.8	103.	101.	103.5	103.8	102.8	105.	101.8	102.3
	25	103.1	106.3	103.4	104.7	105.6	102.6	103.	103.	102.2	102.5
	26	104.	103.5	101.7	104.	102.4	102.2	104.	102.5	102.3	102.4
	27	103.8	104.	102.4	105.	103.8	101.2	103.	104.2	101.8	104.8
Dec.	30	103.4	103.5	102.8	105.4	103.6	103.5	102.	103.	101.8	102.6
	2	104.4	103.6	104.2	104.6	103.5	103.9	103.2	104.5	102.9	103.
	4	104.8	104.2	101.6	106.8	102.	102.8	101.4	101.4	101.6	102.1
	6	103.3	103.4	102.8	107.2	102.3	106.	101.6	102.8	102.1	102.5
	7	103.1	102.2	102.8	101.8	103.	103.6	101.8	102.8	100.6	102.8
	9	103.	103.	103.	101.5	102.5	102.2	100.2	100.9	101.4	102.4
	10	105.6	103.	103.	102.	102.8	102.6	103.2	104.	100.	103.
	11	104.	103.	102.4	103.1	104.3	103.2	102.1	101.	101.5	102.
	12	104.8	102.4	103.	102.8	103.	103.2	103.7	103.	102.	103.4
	14	104.6	103.4	104.	100.	103.	103.	105.6	105.	103.6	104.
	15	104.	104.9	104.6	101.8	104.4	101.9	106.	103.9	104.4	106.5
	16	103.6	104.	103.8	101.	103.	102.	105.8	103.	103.	105.8
	17	104.	105.	104.6	102.6	104.6	103.3	.....	105.1	102.6	104.2
	18	.....	.....	.....	.....	.....	.....	105.	.....	.....	104.2
	19	104.	103.5	104.4	102.4	103.2	103.9	103.2	104.	105.	103.
	20	103.2	103.	104.2	103.8	104.2	101.6	104.6	104.4	104.8	103.8
	21	101.8	102.6	104.	102.8	103.9	102.2	103.7	104.	105.8	102.2
	22	104.	104.2	104.	103.4	107.1	101.8	104	105.	105.	104.3
25	102.8	102.2	103.	103.8	103.7	103.6	103.3	103.6	104.9	102.8	
26	103.5	.....	103.3	103.	104.2	.....	.....	103.8	103.2	103.5	

—I cannot see how some practitioners can do without the REVIEW. They must be without ambition; drones in the profession. Long live AMERICAN VETERINARY REVIEW.—P. A. Girard, M. D. C., New Richmond, Wis.

TOD BULLS.		Bull.	Bull.	Bull.	Bull.	Bull.	Bull.
GROUP III.		58	11	29	9	30	6
Weight when received, lbs.....		505	620	715	795	815	823
Weight when shipped, lbs.....		640	730	730	890	950	940
Gain or loss.....		+135	+100	+15	+95	+135	+117
		Days after Inoculation					
Nov.	11	.....	102.8	102.5	102.8	102.9	103.3
	15	102.2	104.	102.3	102.3	105.5	103.
	17	102.5	.....	.....	.....	104.	.....
	18	102.4	101.8	100.5	102.2	100.4	102.9
	20	102.2	101.3	101.	102.2	101.2	100.8
	23	103.9	101.9	102.2	102.5	102.	103.5
	25	103.	102.2	100.5	102.3	101.8	102.3
Dec.	27	102.8	102.1	103.6	105.	103.	101.9
	29	103.6	102.4	103.	103.	102.8	103.4
	2	102.9	103.	102.2	102.2	102.5	102.6
	5	102.	101.8	99.5	101.	100.4	102.
	7	101.	100.9	101.6	101.2	101.	102.4
	8	102.8	102.	101.7	103.2	102.	101.8
	9	99.8	101.8	101.2	99.6	100.5	101.4
	10	102.4	106.3	103.	102.6	102.	101.3
	11	.....	106.1	.....	.....	102.2	.....
	12	102.4	106.2	102.4	105.6	102.2	103.
	13	103.	105.	102.8	105.	102.	103.
	14	102.6	104.2	103.4	103.8	101.8	102.3
	15	101.4	103.	103.5	102.6	101.	105.4
	16	102.3	103.	103.4	101.	102.2	105.8
	17	103.	102.4	101.8	102.3	102.6	102.8
	18	.....	102.2	102.4	.....	.....	103.8
	19	104.	102.1	102.4	102.2	102.4	101.5
	20	100.8	100.	101.7	101.	101.2	101.4
	21	102.2	101.	104.1	101.8	102.4	101.6
	25	102.6	101.8	103.	101.	101.2	103.8
	26	103.8	102.8	101.9	102.	101.8	102.2

1 cc. Texas Steer Blood.

2 cc. "Recovered"
Native "Spot."

This experiment is of interest on account of the age of two of the individuals. This lot consisted of three pure bred Hereford bulls, raised in Missouri. Two of these, No. 534 and No. 540, were about 2 years old and weighed respectively 1252 lbs. and 1100 lbs. No. 3 weighed 550 lbs. They arrived at the Missouri Experiment Station December 3, 1898, and were held

until the effects of the inoculation had passed off, before sending them south.

The first inoculation was made December 8th. Each bull received $2\frac{1}{2}$ cc. of blood from a northern steer that had been rendered immune to Texas fever by artificial tick infestations.

Bull 534 took sick on the 12th day following. On the 13th day the fever was 105.2° . The fever continued, though not so high, until the 18th day, after which it fell to the normal. During the fever the bull was off feed, gaunt, and laid down much of the time.

Bull 540. Fever appeared on the 13th day, with a maximum of 104.8° . It was of short duration, he continued eating, and did not appear to be seriously sick.

Bull No. 3. Fever appeared on the 6th day, temperature 104.3° F. Had fever and did not eat well for six days. After this the temperature fell and the bull's appetite returned.

The second inoculation was made Jan. 2, 1899. Each bull received $2\frac{1}{2}$ cc. of blood from an immune Texan steer.

Bull 534 showed only a mild reaction from this inoculation. This possibly was a secondary reaction from the first inoculation.

Bull 540 showed fever on the fourth day. Jan. 6th, fever 105.4° ; bull lies down much of the time. Jan. 7th, 106° ; bull off feed. Jan. 8th, 103.7° ; refuses food. Jan. 9th, 101.5° ; eats hay only. 12th, temperature 100° F.; eats quite well. From this time the bull remained in good health.

Bull No. 3. Fever followed second inoculation. Jan. 12th, fever 103.8° . Jan. 13th, fever 105.6° ; bull off feed and has diarrhoea. Jan. 14th, fever 104.6° F.; Jan. 15th, fever 104.5° F., urine clear. Jan. 16th, fever 105.8° F. Jan. 17th, 104.5° at 3 P. M. Jan. 18th, fever 104.6° , bull eating. Jan. 19th, 104.8° . Jan. 21, 103.5° , fever falling. From this time on this bull appeared quite well. During his stay at the Station he gained 65 lbs. in weight.

A third inoculation was given to these bulls. Each received 3 cc. of blood from an immune Texan steer on Feb. 22d. The



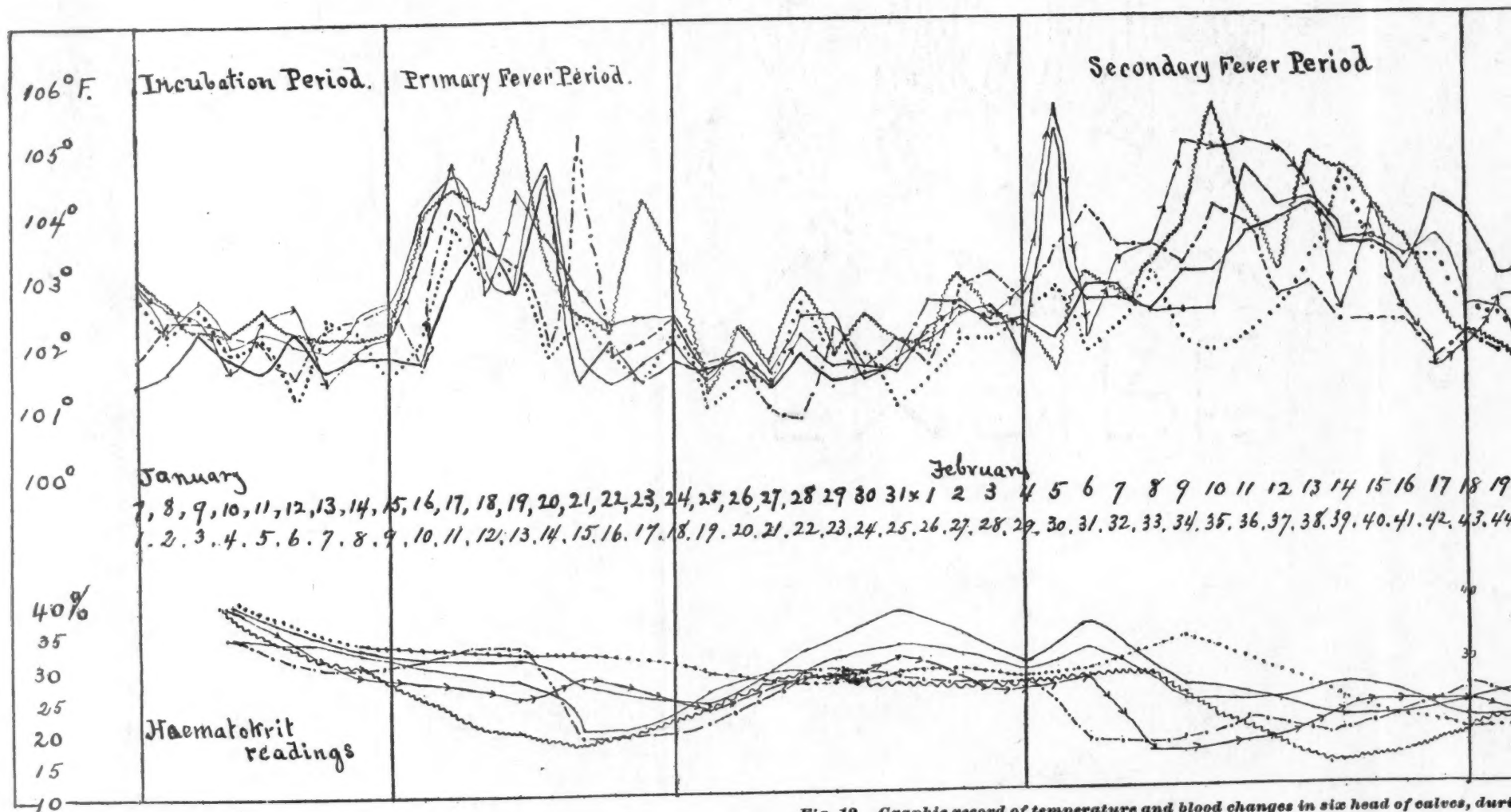


Fig. 12. Graphic record of temperature and blood changes in six head of calves, during

Period

march

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28, 1 2 3 4 5 6 7 8 9 10 11 12 13. 14 15 16 17 18 19 20. 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74

30

n six head of calves, during immunizing period.

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bulls were shipped south Feb. 25th. They arrived in good condition at the ranch in Harrison county, Texas, March 2d.

Clinical notes after shipment.—March 28th. The bulls are in fine condition. Found one tick on Nos. 534 and 540. None on No. 3. They are fed on bran and oats twice a day, and allowed to run on a good pasture.

April 3d. The bulls run daily with the native cattle. They are apparently well.

April 10th. The bulls appear healthy. Found six ticks on Nos. 534 and 540. No ticks on No. 3. The bulls run freely with native cattle, but are housed and fed at night.

April 24th. The bulls are doing well. But few ticks have been on them.

May 30th. The bulls appear in good health.

June 14th. Bulls were infested with ticks. No. 534 has fever, temperature 104.5° F.; gave salts. No. 540 has fever, temperature 106.5° F.; gave salts. No. 3 has no fever, well infested with ticks.

June 16th. Bulls recovering. No. 534, fever falling, temperature 102.5°, desires food. No. 540, fever falling, temperature 104.5°, appears better. No. 3, no fever, appears normal.

June 18th. Bulls all doing well. No. 3 has shown no signs of fever.

June 19th. Bulls appear well. July, no report.

August 18th. Bulls running with native cows. They all appear well. No. 3 has never shown any signs of fever.

OVERALL.—84 HEAD OF REGISTERED HEREFORD BULLS.

This lot consisted of 84 head of Hereford bulls, all bred in Missouri. Their ages ranged from 7 to 12 months. They were shipped in very rough weather, and on arrival at the ranch in Coleman county, Texas, they were very tired and drawn. They were fed cotton seed, which caused a considerable number of them to have scours. On December 22, 1898, they were inoculated with defibrinated blood from a two-year-old immune steer, bred on the ranch. Sixty-four were given 1 cc. each of the blood and the remaining twenty were given 2 cc. each. These

calves became sick at the usual time after inoculation (about 10 days), and about one-half of them were severely affected. Three of the number died. At this time the manager noticed that many of them had some ticks on them. By April 24th six had died, and the entire lot showed sickness. About June 1st they were turned into a large pasture of thirty thousand acres, among the range cattle, and have remained there the whole summer. The owner says they are doing very nicely (August 15, 1899), and up to this time seven had died of fever. Six have died of blackleg, and one from accident. He says that in his opinion they should have been kept up in a dry lot until the inoculation fever was over before exposing them to the ticks.

BURGESS.—68 HEAD OF REGISTERED SHORTHORNS.

This lot consisted of 68 head pure bred Shorthorns, whose ages ranged from 8 to 12 months. They were raised in Kentucky, and arrived at the Blue Mound Ranch, in Wise county, Texas, November 24, 1898. On January 4, 1899, each one received subcutaneously 1 cc. of defibrinated blood from a two-year-old steer that had been raised on the ranch. The owner of these cattle reports, under date of March 4, 1899, that four of the calves have died and that the remainder have been reduced in flesh, but appear healthy otherwise. About June fever appeared among them and about one-half of them showed severe symptoms; by July 24th twelve had died in all.

(To be continued.)

OPHTHALMIA.*

BY G. ED. LEECH, V. S., MILWAUKEE, WISCONSIN.

When the subject of periodic ophthalmia came up at the last meeting, I little thought that I would be called upon to write a paper upon the subject, and when the Secretary wrote me in regard to it I did not have any great desire to take it up, for it is with some such feeling of dissatisfaction as must fill

* Read before the Wisconsin Society of Veterinary Graduates.

the mind of a geographer who is about to enter upon the description of a country into the heart of which no traveller has ever yet been able to penetrate, that I do it. May we be able to set about the description of a disease whose nature and cure even yet remain to be developed.

It would be asserting too much to say that we do not understand more about it than the former practitioners of "horse medicine" did. Science has shed its light upon and much improved our knowledge of diseases of the eye, as well as those of other organs, but all art and practice have failed to furnish us with anything in the shape of a remedy by which we are able to arrest this one in its destructive course, or prevent its almost sure return and fatal termination, and therefore in point of naked fact, what we have professed to learn concerning periodic ophthalmia has turned out of very little practical use to us. Still it is our duty to record what we do know and to lay down such rules for the guidance of future investigators as our experience has put us in possession of. And with such views as these, rather than with great prospects of proving of much benefit to our suffering patients, must we enter upon the subject of this paper.

This is, indeed, as has been said of some other diseases, "The bane of horse flesh." What can be more annoying to the feelings of the owner of a good horse than to be told that what he took to be simply a cold in the eye, or a weak eye, is likely, nay almost sure, to prove in the end a case of blindness, and as it is not within the skill of his medical adviser to prevent this fatal termination, he had better avail himself of the first opportunity to dispose of him. Such advice as this is enough to make him exclaim: "I hrow physic to the dogs; I want none of it."

Name.—Among the various appellations that have been applied to it, we are still using the one given it by the French veterinarian who preferred it on account of its relapses, as though it were a fresh disease, after having been absent for a more or less considerable time. Prof. Coleman called it specific

ophthalmia, the same being applicable to glanders, grease, azoturia, etc. The earlier writers called it moon blindness, or lunatic blindness, claiming that as the moon changed the horse gradually recovered his sight; some also called them moon eyes. Mr. Fearon called it gouty opthal; Mr. Spooner, hereditary ophthalmia, and Mr. Croxford asks why it may not be called constitutional ophthalmia, and goes on to say that after all the knowledge we have on the subject, this seems to him the one most appropriate to use.

The Symptoms.—The symptoms, together with the history attached to them, are sufficient to give the practitioner a correct idea of the nature and progress of the disease. One of the most common accounts one gets is that the horse was all right the night before and that something must have gotten into the eye during the night and, indeed, the half closed aspect only verifies the statement. The upper lid droops on the corner to shut out the light, tears are produced in that quantity that they cannot be carried off by the puncta lachrymallis, and as a consequent result flow over the lower lid and stream down the face; both eyelids, together with the venous vessels in the immediate vicinity of the eyes, are tumid and fuller than ordinarily. What little is visible of the globe of the eye appears dull and sunken, the organ is very intolerant to light; and, upon reflecting the lids, causing the ejection of the membrana nictitans, we are given a view of the membrana conjunctiva reddened and inflamed, commonly of the sub-acute character and more or less tumid from infiltration. The circumference of the cornea sometimes exhibits a broad nebulous circle, being an extension of that which in the human is called arcus senilis.

In the human eye where there is an arcus senilis of the cornea a similar opaque ring exists around the margin of the crystalline body. Is this the case in the horse under disease? At the beginning the anterior chamber of the eye commonly preserves its lucidity, so that we distinctly view the iris and pupil through it, the latter much contracted, the former unchanged in color, but in the course of two or three days after-

ward, and sometimes on the very day of the attack, the chamber becomes obscured by a dingy white or amber colored deposit seen floating within it, through which the pupil is hardly discernible, contracted as it is to the breadth of a broad line, and looking more like the black eye of a garden bean than the ovoid aperture it was before. Supervening upon this we, in some cases, have obscuration of the cornea taking place, arising from an extension of the conjunctival inflammation over it, and this, in very severe cases, is so intense that the vessels carrying red blood are perceptible upon its surface, shooting from all sides of the circumference into a sort of circulus vasculosus, from which others proceed after the manner of radii toward a common centre. The obscuration of the cornea, though it may still leave the lymph effused into the chamber of the eye visible, precludes us from distinguishing the pupil and the iris and it is not until the inflammation has abated that we again regain a view of those parts, and this constitutes the first or inflammatory stage of ophthalmia, which generally lasts from three to ten days or longer, according to the intensity of the inflammation, differing only in different stages. In the 3d or 4th stage we see through the anterior chamber the iris, murky and darkened, altered in color and lustreless, with the pupil contracted as much as ever but not evincing that sensitiveness to light which it did in the inflammatory stage.

Within the chamber and gravitating toward the bottom of it are to be discerned flakes or flocculi of whitish or yellowish lymph, effusions, as we suppose, from the vessels which secrete the aqueous humor. There is no longer the overflow of tears on the face or the conjunctival inflammation, showing clearly that the inflammatory stage is passed, leaving only its consequences behind and the eye appears to recover from day to day until there is a relapse again. Relapses are looked for as a matter of course, and yet there are cases where there has been but one attack and that one not of a destructive nature.

The changes that the structure of the diseased eye undergoes are with few exceptions the result of the excessive inflam-

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mation, and in general require some considerable time for its completion. The first attack, mild in its nature and not of long duration, may leave the eye altered only in such respects as in the course of a long intermission may be rectified. Commonly after the second attack and occasionally after the first there will still remain more or less haziness of the cornea, through which we perceive the iris lustreless and murky in its aspect, the pupil contracted and without any of its natural bright blue to be seen. The corpora nigra also appears more pendulous than usual, wanting their jetty blackness and on occasions exhibiting light specks or opacity, and every subsequent attack will add to these structural changes.

Morbid Anatomy.—D'Arbovals, the eminent French veterinarian, says that observation shows that an absence of any distinct chambers containing aqueous humor, nothing, in fact, but a single cavity remaining; sometimes the iris appears lacerated, detached from the lens, reduced to a very small volume, its capsule only remaining perhaps thickened and opaque; at other times the lens is of its natural size, its capsule being opaque, with some white spots in its substance and concretions upon its inner surface. The posterior portion of the crystalline lens is thickened and indurated, almost as if it had been boiled, and it reflects a bottle-green color. The fibres of the iris surrounding the lens on some occasions become osseous and in the place of the vitreous humor, resulting from its decomposition, we find a viscous orange-colored fluid heavier than water. Instead of the retina there is a fibrous membrane behind the crystalline, the optic nerve is flabby and softened.

Geldings are more liable to suffer from this disease than mares, and by some writers it is supposed that there is some connection between dentism and ophthalmia. The eye most subject to this disease is the very small dark looking one, which does not disclose any appearance of the white, wall or watch eyes seeming to be exempt.

The causes of periodic ophthalmia demand the greatest attention from us, both upon account of the light which they

shed upon the nature of the disease and the suggestions they furnish for its prevention. Hereditary influence is one of the causes which some of the profession claim it arises from, and no doubt it can be well sustained, for the records show that in those countries where there is no restriction as to what can be used for breeding, they have a larger percentage of the disease, but there is some doubt in my mind as to whether in this case it is the disease that is transmitted or only the predisposition. If this is answered "yes," how then is it that the disease so much confines itself to horses of certain ages and situations? If "no" is the answer, then ask yourself why the production of the disease under certain conditions and states of excitement can be most satisfactorily accounted for. I am still firmly of the opinion that it is predisponent only and not excitant.

We now come to the question : whether this disease is constitutional or local ; or, in other words, is it due to some micro-organism in the blood or is the predisposition inherent in the formation or excitability of the eye? These are most interesting questions of which various facts and observations, current among us, may be brought forward by investigation. But it matters not whether this is called hereditary or due to an original predisposition, it amounts to one and the same thing, and I will venture to say that this is by far the most frequent cause of the disease ; but while I make this assertion, I stand ready to admit that it also arises from a variety of other causes, quite adventitious and unconnected with this source. Among these may be mentioned indigestion, miasma, neuritis, dentition, debility from overwork, depletion from blood-letting, high feeding, too much confinement and sudden exposure to light. It is also a very noticeable fact that those horses not accustomed to domestication are, generally speaking, free from it and it is noticed to be more prevalent in poorly ventilated stables, the same as other constitutional diseases.

To what then is ophthalmia to be attributed? The advocate of hereditary influence answers : to the circumstance of the parent having had it. While others will say, "no," but to

nervous influence, to heat, to plethora, to a contaminated atmosphere. For my own part, however much hereditariness or other causes may predispose the animal to take the disease, I cannot help thinking that many horses who now contract ophthalmia in stables would escape in situations in the open air; and that in stables we find the number of cases proportionately less according as the animal at the trying time of life (between 4 and 6 years) is moderately fed and worked and kept in an uncontaminated atmosphere. I believe that anything that will excite commotion in the system at this period is liable to affect the eyes, though the eye is not so liable to be affected as the membrane lining the air passages; most young horses at this time of life, on being stabled, are sure to be afflicted with some catarrhal or bronchitic trouble, as strangles, influenza, swollen limbs, diarrhœa, etc. I cannot, therefore, after viewing these cases from all sides, hesitate in pronouncing this disease constitutional and not local; not a single conjunctival inflammation, although the conjunctiva is a participant in it, but essentially and primarily a disease of the internal structure of the eye. Just how these structures become affected I cannot decidedly affirm, but only venture upon an opinion that the blood is the medium of contamination, which is only one opinion among many others just as deserving.

The treatment for this disease is very unsatisfactory, and I will only say that the operation of tapping the aqueous chamber is recorded as early as 1841, and was the result of an accident—recorded by Dr. Price, of Cork.

Sympathetic Ophthalmia ("Diseases of the Eye," by Norris and Oliver.) This case is reported by Deutschmann, and is of more than usual interest because the man died of carcinoma of the stomach. The changes found in the sympathizing eye, in the opinion of Deutschmann, must have been the result of a process that necessarily was limited to the visual apparatus from beginning to end.

A man thirty years old had undergone an unsuccessful operation upon his right eye six months before; inflammation

associated with great pain followed and sight was ultimately lost. The patient when first seen presented the following conditions: In the right eye was phthisis bulbi and occlusion of the pupil; the cornea was clear, though there was a scar at the limbus marking the point where the incision was made at the time of the operation; slight ciliary injections were also present, and the eye was soft and extremely sensitive to touch or pressure. The other eye was sound, so far as external appearance and vision was concerned. The ophthalmoscope, however, showed a red papilla with indistinct edges, the vessels being dilated and the surrounding retina cloudy: the patient refused absolutely to submit to an operation, so he was put through an inunction, sweating and iodide of potassium. It may be well to add that there was no evidence of any syphilis, though the man was very pale and had a cachectic appearance; he had no fever and complained of nothing but a trouble in his stomach. The treatment with the above formula proved fruitless, the primarily affected eye grew less irritable and gradually lost its sensitiveness to pressure, while the neuro-retinitis in the other eye increased and vision soon began to fail, followed by the appearance of fine opacities in the vitreous body. The patient was lost sight of, and when next seen the vision in his good eye was $\frac{1}{15}$ and there was present pronounced neuro-retinitis, opacities in the vitreous body and beginning ciliary injection; the other eye showed no further change. The cachectic condition of the patient seemed worse, and he presented the appearance of one afflicted with carcinoma. He still refused to allow an enucleative, so he was put under active treatment, with a view to bettering the condition of the other eye, the eye in which the sympathetic ophthalmia was present. Things continued to go from bad to worse; posterior synechia appeared, and the vitreous body became so cloudy that it was not possible to see the fundus. The vision sank to recognizing the movement of the hand, the general condition grew worse until there was no longer any doubt of the existence of carcinoma of the stomach. He died a few days later.

An autopsy was obtained and both orbits, the eyeballs, the optic nerves and the chiasms were secured for examination. It may be mentioned that at the autopsy the meninges showed nothing abnormal, the right eye was slightly atrophic, the optic nerve entrance decidedly spread out and infiltrated throughout with round cells. The trunk of the ciliary nerves at this point present nothing abnormal; sometimes here and there in the sheath a round cell would be noticed; the tissue of the optic nerve itself was abundantly infiltrated with round cells, especially in the pial septa. The walls of the blood vessels in the papilla were richly infiltrated with round cells. The retina, especially in the nerve-fibre layer, was markedly infiltrated and at points was separated from the choroid by an exudate, the vessels of the retina participated to the same extent in the process. The retina in the vicinity of the ora-serata did not show much infiltration, but was simply atrophic. The choroid was atrophic very generally and the pigment epithelium at points was detached and partly atrophied. Both the retinal infiltration and the choroidal infiltration were less pronounced near the ciliary region. The vitreous was detached anteriorly and posteriorly and transformed into a fine fibrous tissue.

The sclera was slightly infiltrated at the posterior pole; infiltration of the sclera, as well as the subconjunctival tissue, was noticed at the limbus of the cornea. The cornea was also infiltrated and at its upper border was to be seen a scar, along the course of which cell infiltration was very noticeable. The iris and ciliary body showed atrophy of the pigment elements, posterior synechiæ was present, the synechiæ consisting of nucleated fibrous tissue containing round cells, particles of pigment and endothelioid cells, forming a tissue which completely closed the pupillary opening.

The anterior chamber contained an exudate that consisted of round cells and fibrin; especially noteworthy was an anterior synechia unassociated with a corneal scar; there was hardly more than a rudiment of the lens remaining.

As regards the condition of the second eye, the optic nerve

where it passed into the eye-ball was richly infiltrated with round cells and this was particularly noticeable in the pial-septa; the ciliary nerves at this point were intact, except that here and there a round cell could be noticed. The papilla was very much swollen and infiltrated with round cells and the sheaths of the central vessels participated in this process. The retina, especially in the fibre layer and as far forward as the ora serrata, was the seat of round cell infiltrations, the infiltration showing even to some extent in the ora-serrata. The choroid was richly infiltrated, the cells sometimes occurring in little groups or heaps, and sometimes being uniformly distributed throughout the tissue. The pigment epithelium was loosened. The round cell infiltration of the choroid appeared to be less pronounced a short distance forward from the equator, but beyond this up to the ciliary body and in the latter the cell infiltration was abundant. The sclera in general was intact, though the walls of the small blood vessels penetrating the sclera were infiltrated.

The vitreous body was somewhat shrivelled and at some points was detached from the retina; throughout the vitreous body were to be seen numerous cells, partly small, round cells, partly large cells, with vacuoles and containing several nuclei. The posterior chamber contained coagulated fibrin mixed with round cells. The lens was intact except that there was an abundant pigment deposit at the anterior capsule and in addition to this an exudate that soldered the anterior capsule to the posterior surface of the lens. The ciliary body was densely infiltrated with round cells. The anterior chamber contained a fibrinous exudate rich in cells. The iris was infiltrated throughout with round cells and the cornea showed a slight infiltration at the scleral border, as did also the sub-conjunctival tissue at this point. The external sheath of the optic nerve of the primarily affected eye, all the way up to the chiasm, was only moderately affected; the inner sheath, however, was considerably infiltrated with round cells, the infiltration being here and there quite dense and at other points more diffuse. The cell infiltration

was pronounced in the pial-septa. At the chiasm the inner sheath of the nerve was markedly infiltrated. The pia-mater was infiltrated only in the immediate vicinity of the chiasm; otherwise it was perfectly normal.

The other optic nerve showed also pronounced round cell infiltration of the inner sheath at the chiasm. This cell infiltration continued with variable intensity all the way down to the second eye.

Both orbits were normal and there was here no suggestion of involvement on the part of nerves, muscles or blood vessels. The ciliary nerves wherever met with in the sections were perfectly normal. The brain and its membranes were normal. Micro-organisms were found in both eyes and also in the optic nerves. The organisms had somewhat the appearance of gonococci and in the primarily affected eye was observed to be most numerous in the ciliary body, iris and choroid, especially in that part of the choroid near the papilla. They were also to be seen in the retina, in the papilla and about the central vessels. In the optic nerve organisms were found in the nerve trunk and in the walls of the smaller blood vessels, which pass through the inner sheath of the nerve. No organisms were found in the outer sheath of the nerve. The condition was the same in both optic nerves and in the chiasm. Some few organisms were found in the pia-mater in the immediate vicinity of the chiasm. In the second eye micro-organisms were found to be most abundant in the posterior part of the eye, just as was the case with the first eye. There were no organisms in the orbits.

It will be remembered that neuritis optica existed for some time in the second eye before there was a disturbance of vision. Deutschmann thought that the neuritis was produced by the chemical and metabolic products that precede the migration of the organisms and that it was only where the latter had traversed the optic nerves and passed into the second eye that the disease spread with rapidity and with its usual destructiveness. He regarded the optic nerves and chiasm as the route followed

by the organisms and believed that the pial sheath of the nerve and the nerve trunk were the parts preferably attacked, and he concluded by stating his position again with respect to the pathogenesis of sympathetic ophthalmia, a position which is well known.

Such a case is of undoubted value, for if a general infection can be absolutely excluded we are not far from the solution of this problem. The observation, however, is an isolated one, and while we cannot but appreciate its value, it will never be looked upon as conclusive, so long as the experimental side of the question remains so one-sided.

It may be added that a general infection cannot possibly be excluded without a bacteriological examination of the blood and other organs, as such general infection, especially with streptococci, is not infrequent as a terminal event in various chronic diseases, including cancer of the stomach. The many negative results do not disprove the bacteric origin of sympathetic ophthalmia, but before regarding such a theory as proved, the specific organisms must be identified, and especially should this be the case with an infection like sympathetic ophthalmia, a disease the pathogenesis of which really does admit of more than one reasonable interpretation.

DOG DISTEMPER.

BY COLEMAN NOCKOLDS, M. D., V. S., GRAND RAPIDS, MICH.

(Concluded from page 187.)

Pathological Anatomy.—The lesions observed in the respiratory type of distemper are due to rhinitis, laryngitis, bronchitis, and those changes which are peculiar to the different chest affections. The nasal mucous membrane is swollen and œdematous; it is covered with a thick greenish purulent exudate, which is also present on the lining membranes of the sinuses of the head. Laryngeal and bronchial mucous membrane is red, tumefied and ecchymotic; the bronchial tubes are filled with a muco-purulent and frothy exudate. The lungs,

when involved, show the changes peculiar to the disease present of lobar pneumonia, congestion of the lung capillaries, which causes the lung to look redder, and it is larger than usual. On section, blood serum and froth exude. The whole organ resembles a spleen; it is not as spongy and elastic as usual, but it still floats in water if the disease has not advanced beyond the congestive stage. When red hepatization has taken place, the spongy character of the lung is gone; it is hard and solid, resembling liver; the vesicles are filled with fibrin, albumen or lymph, which has coagulated. The lung sinks in water and is friable. If grey hepatization has occurred the lung contains cavities of pus; upon pressure pus exudes at different points; it is paler and sinks in water.

Often the pleura is involved; it is thickened and injected, and lymph or pus adheres to it. The lung in lobular pneumonia if cut into shows the lobules as ill-defined reddish-grey nodules; bloody fluid can be squeezed out, and the surface of the lung is smooth instead of granular.

In the intestines the changes are swelling of the mucous membrane, which is more or less ecchymotic. Often there are necrotic patches present. The submucosa is infiltrated with liquid, giving rise to œdema. Often there is ulceration present, especially in the neighborhood of the ilio-cæcal valve. Peyer's patches are involved, contents of bowels bloody.

The brain is œdematous and the vessels of brain engorged; lymphatics hyperæmic. The myocardium is of a greyish faded leaf color, due to the fatty change which has occurred. The liver, kidney, and other parenchymatous organs have undergone either cloudy swelling or fatty degeneration, according to the length or severity of the fever which existed. Bed sores are present upon the elbows, thighs, hips, and other prominent parts, due to constantly lying down and lowered nervous function.

Treatment.—Prophylaxis: Distemper is a disease that cannot be prevented; it attacks subjects under all conditions, but the spreading of it may be stopped to a certain extent by isola-

Either will relieve the pain and act as a sedative, as well as to help to keep up the strength. If the animal is extremely languid strychnia, 0.001, hypodermically. Dust skin lesions with

Sig. Dusting powder.

If intestinal parasites are present remove them by giving

Fast for twenty-four hours before giving the tæniafuge and follow in six hours with ol. olivæ, 32.00.

M. Sig. One morning and night for three days.
Oxyuris. Enemas of solution of quassia or vinegar.

Patient will generally eat nothing, but must be fed beef tea, eggs, wine, or small and frequently repeated doses of brandy. Hydrargyri chloride mitis or oil every third hour; quinin, 0.33 every three hours. If intense pain is present, morphia, 0.011, every four hours hypodermically, or chlorodyne, 0.333, every three hours per orem. If temperature rises above 105° F., cold sponging at intervals of two or three hours until down to at least 104 degrees. If the temperature cannot be controlled by above method give acidum salicylicum, 0.200, or salol in same doses as a last resort. In case above does not have the desired effect, phenacetin or acetanilid, 0.133, every two hours until temperature is lowered, but do not use depressants unless absolutely necessary. Fever is a necessary accompaniment of infectious diseases; the increased tissue metabolism may be looked upon as an effort on the part of nature to destroy and get rid of the cause of disease; pyrexia, as a protective mechanism, and dragging down the temperature, is often detrimental to the patient. Fever should not be interfered with unless it goes on to such an extent as to burn up, as it were, the tissues and threaten the vitality of the animal. Restlessness may be controlled by sulphonal, 0.333, given in warm milk. Anoint the forehead and bridge of the nose with fat. Antiseptic inhalations or even sprays should be used to increase the secretions. Clothe body and head. Laryngitis, if present, counter-irritants, potassium chlorate. If cough troublesome due to bronchial irritation, give

R	Codeia sulphatis,	0.226
	Ammon. mur.,	20.000
	Syr. prun. virgin.,	64.000
	Spts. junip. comp.,	128.00
M.	4.00, t. i. d.	

If secretions free, ol. eucalyptus, 0.200, in capsules, every four hours. When diarrhœa is persistent sulpho-carbolate of zinc, 0.123, every two hours, or, what is perhaps the best, tannopine, 0.333; hot cloths to abdomen relieve pain; strychnia, 0.0013, to keep up heart; chloral, 0.666, to relieve excitement and produce sleep. If animal is strong and the attack

comes on with convulsions or rabiform symptoms, chloroform inhalations followed by bromidi potassi, 0.666, every two hours, or chloral hydrate, 0.666, every four hours, as indicated. Constipation should be treated by enemas of warm soapsuds, to which a little glycerine or of tympanitic turpentine has been added. In the severe form of distemper the general management is much the same as in the mild or medium. More stimulants are indicated; quinine, 0.333 doses every three hours, reduce the temperature. At the same time it also sustains the vital forces, controls nervous symptoms, and lessens the tendency to inflammation.

Nothing that tends to depress is to be countenanced. If cardiac collapse threatens, strychnia, 0.0013, or digitalis fluid extract, 0.133. Diffusible stimulants, spiritus ammonii aromaticus, 2.00, alcohol, 2.00 to 4.00, must be frequently administered. When gastric symptoms predominate, as nausea or vomiting, administer first an emetic of either zinci sulphatis or cupri sulphatis, in 0.333 doses, in water, or apomorphine, 0.008, hypodermically; but this last is too depressing for ordinary cases. I have been in the habit of giving the zinc or copper in capsules, followed by the water. After the animal has vomited give

R Ac. hydrochloricum dil.,
Pepsinum, āā 4.00
Aquae dist., 64.00
Sig. 4.00, well diluted, t. i. d.

If acid is not indicated give

R Carbo ligni,
Pepsinum,
Bismuth subnitrat., āā 2.00
M. ft. capsulæ No. xv.
Sig. t. i. d.

When vomiting persists, atropine, 0.0005. Among other remedies to check vomiting I might mention opii pulveris, 0.133, ac. carbolic, 0.016, cocaine, 0.006, ingluvin, 0.666, ac. hydrocyanic dil., 0.066.

Convalescence.—The management of this period requires great care and judgment. More cases are lost through carelessness at this time than from the actual disease itself. At

this time we must guard against complications; be careful of exposure. Usually after a severe attack the temperature is below normal for several days, and so long as this condition exists the dog is liable to chills and a relapse. Allow a liberal diet of easily digestible foods, and in those cases where there has been intestinal hæmorrhage confine it to a liquid diet for several days. Build up the system with tonics.

	R	Ac. mur. dil.,	10.00
		Pepsinum, puri,	8.00
		Tr. nucis vomicæ,	6.00
		Glycerinæ,	48.00
		Aqua dist.,	64.00
	M. Sig.	4.00, well diluted, before each meal.	
or	R	Quinia sulphatis,	32.00
		Quassia pulveris,	32.00
		Ext. gentianæ,	96.00
		M. ft. massa.	
	Sig.	1.333 t. i. d.	

If animal is anæmic, Bland's pills, t. i. d.

In speaking briefly of complications, pleuritis or pneumonia, apply external applications to thorax, in form of sinapis or linimentum saponis, and put on a binder of some thick warm material. Expectorants, stimulants, iodides. Hydrothorax, perform paracentesis thoracis.

For chronic bronchitis use

R	Balsam copaiba,	5.00
	Ammon. muriat.,	6.00
	Extr. glycyrrh. pulv.,	4.00
	Mist. ammonii, q.s.	96.0
M. Sig.	8.0 every four hours.	

Potassii iodid., squills, senega, turpentine, etc., or

R	Heroin,	0.066
	Guiacol carbonate,	0.06
M. ft. capsulæ No. xii.		
Sig.	t. i. d.	

Bed sores, bathe with alcohol.

For persistent diarrhœa give

R	Pulv. ipecac. et opii,	2.00
	Bismuth subcarbon.,	8.00
	Salol,	2.00
M. Chart No. xii. Sig.	Every two hours.	

For chronic dyspepsia frequently wash out stomach. Give

argentum nitras, 0.016, t. i. d., with bicarbonate potash solution (5 per cent.).

For chorea give

R Liq. arsenalis, 2.00
Syr. simplices. 98.6
Sig. 4.00 t. i. d.

For paralysis, strychnia in progressive doses. Electricity.

For goitre, unguentum iodi co.; internally, potassi iodidum.

For opacities or leucoma, Europhen, tannate of glycerine, or dust with calomel.

R Hydrargyri flavum oxidum, 0.066
Vaseline 4.00, or protogol 5 per cent. sol.
M. Unguentum.
Sig. Apply daily.

MY EXPERIENCE WITH MEDIAN NEURECTOMY.

BY J. PAYNE LOWE, D. V. S., PASSAIC, N. J.

A Paper read before the Veterinary Medical Association of New Jersey, at Newark,
May 10, 1900.

In bringing before you the subject of median neurectomy it is my intention mainly to give you my experience with the operation; to be modest, to cite a number of cases which I have operated upon during the past year or two, giving you accurately and impartially the pathological conditions for which the operation was performed in each case, the immediate result, and the subsequent history to date. In doing this I hope to be able to show that median neurectomy is an operation that is practicable and safe, and that the practitioner should perform it without hesitancy wherever it is indicated.

Familiarize or rather refresh your mind with the surgical anatomy of the region, which you can get from any of the standard authorities on veterinary anatomy. The anatomical essentials, however, can probably be more readily obtained by referring directly to that most excellent treatise on this operation by Prof. C. Pellerin and translated into English by our own Liautard.

Where the operating table cannot be used the animal is cast

with the hobbles on the side which is to be operated upon; the upper fore limb is taken from the hobble and by means of a side line secured to the corresponding hind one. The lower fore limb (the one to be operated upon) is also taken from its hobble and the bar hobble applied to it and shin of the hind limb. The limb is also held firmly in extension by an assistant with a strap or rope. Having thus well secured your animal, and having sponges, antiseptic solutions, etc., and the necessary instruments ready, which are: two bistouries, one convex and one straight, a grooved directory, curved scissors, bull-dog forceps, plain dissecting forceps, a couple of blunt retractors, and a blunt tenaculum, you are prepared to proceed.

The operation is performed upon the inner side and upper portion of the fore arm. The point for the incision is immediately under the round eminence formed superiorly by the humero-radial articulation, and inferiorly by the bicipital tuberosity and the rough impressions back of it. Placing the finger just inferior to the above eminence, feel for the posterior border of the radius, and make your incision just a little posterior to that border, say a quarter of an inch. By observing this point you will generally be right over the nerve and posterior to the vein. At this point make your incision through the skin, about one and a half inches long, then cut through and parallel with the fibres of the sterno-aponeuroticus muscle; then go through the cellular tissue, when you will come down upon the anti-brachial aponeurosis, which is attached to the posterior border of the radius, and is dense and inelastic. Now carefully take hold of this aponeurosis with your bull-dog forceps, raising it slightly, and carefully puncture it sufficiently to allow the introduction of the grooved directory, using this as a guard against injuring the vein. By cutting from within outwards, divide this aponeurosis to the extent of your outer incision. Have an assistant hold the edges of the wound apart with a pair of blunt retractors. We now see the internal flexor of the metacarpus. In front of this muscle we should see the nerve, which is recognized by its whitish color, flattened form and sen-

sitiveness. You now also see the large vein in front of the nerve, which is recognized by its dark color. At this location the vein usually lies in front of the nerve; the artery is generally concealed by the vein and nerve, but a careful study of the anatomy and experience will show that these relations are not always constant, so if you do not see the nerve, have patience and look further.

Having found and isolated the nerve, pass a blunt tenaculum under it and raise it slightly, dividing it on a level with the superior part of your incision. Take hold of the distal end and resect an inch of the nerve and remove it. Wash the wound out antiseptically, and the operation is completed.

If the operation has been neatly performed, the wound will be healed in about two weeks. If the season permits, irrigate the limb daily with cold water, and follow out the general principles of antiseptics.

Case No. I.—The subject was an aged mare, weighing about 1000 lbs., suffering with chronic periostosis of the fetlock. The lameness was very marked. I operated on her April 1, 1899. Immediately after the operation an apparent improvement was noticed, which was probably due to shock and being confined in the hobbles. On the second day was very stiff and sore in walking, which was due to the soreness and swelling in the operated region. This animal was given six weeks rest, but the results were negative—no improvement whatever, as the exostosis affected the mobility of the joint. It can be stated that the lameness was mechanical, and therefore could not be overcome.

Case No. II.—Small mare, used for road purposes. Had been lame in the foot for a period of three months, during which time she rested and received a liberal amount of palliative treatment, and had three blisters applied, without any or very little improvement. Cocaine injected over the internal plantar nerve on several occasions caused the mare to go temporarily sound. My diagnosis was navicular disease in its incipiency. I operated on her on April 10, 1899. In two weeks the wound was healed and in three weeks the mare was driven and went sound,

and continues to go sound at this writing. Previous to her lameness this mare had good knee action, and it is interesting to know that after the operation she had all her former action, but she always pointed the foot, as she did before the operation. I am of the opinion that the operation diminished the pain sufficiently to remove the lameness, but as sensation was still partial in the foot, and in view of the nature of the lesions, she still pointed. I have been looking for this mare to go lame, but she does not.

Case No. III.—Mare, twelve years old, weighing about 1300 lbs. ; had been lame for about a year ; was too lame to be of any service, even for slow work ; and inspection and manipulation of the limb revealed the following : Marked induration of the flexor tendons and contraction of the same, with consequent knuckling ; an exostosis was detected on the inside of the coronet ; the heel of the foot was high, and in standing the toe alone was placed on the ground ; the heel did not quite touch the ground in walking. I looked upon the exostosis as the primary cause of the lameness and the thickening and contraction of the tendon and the high heel as the result. On April 15, 1899, I operated upon this mare, and immediately after the operation she stood down square and put weight on the limb in standing ; in fact, she had a tendency to rest the other limb. This mare had a month's rest, and since has been serviceably and practically free from lameness. Of course, considering the lesions that existed, we could not and did not get that freedom of movement as in a normal limb.

Case No. IV.—Mule, chronic tendonitis ; very lame even in walking, limb flexed in standing and did not get the heel down right in walking ; subjected to the operation on May 14, 1899. The usual rest was given ; the immediate effect was not so pronounced, but after a month the mule was put to work, going nearly all right, and gradually improved, and now, almost a year afterward, is going serviceably sound, and is again a useful working animal.

Case No. V.—Heavy draft horse, 14 years, and weighing

about 1600 lbs. A tendonitis developed which resisted the usual forms of treatment. Rest was given and two blisters applied, but the trouble progressed, contraction and thickening of the tendons becoming well marked, with knuckling. The animal was now very lame and three months had elapsed. On September 26, 1899, median neurectomy was resorted to, and at once relief was afforded. The animal rested about six weeks and was put to work doing heavy hauling, and to-day is going all right. The lesions are still apparent to the eye, but an apparently doomed horse was restored to usefulness.

Case No. VI.—Aged grey mare, very lame in walking; periostosis of the fetlock was present. She also had side bones on both fore feet and on one hind foot. I did not connect the lameness with the side bones, but attributed it to the periostosis of the fetlock. I operated on January 15, 1900. Immediately after the operation there was a marked improvement, but still slightly lame; was rested for four weeks and seemed to be doing well; was put to work at heavy pulling and the lameness returned with all its severity. This was a negative result. At this time the animal was disposed of and passed out of my observation.

Case No. VII.—Mule, lame for a year or more, lameness gradually becoming aggravated. On February 12, 1900, at the time of the operation, was very lame and not much weight put on the limb when standing. Immediately after the operation a marked improvement was noted in walking and trotting, though the action of the lower part of the limb was limited. The last time I saw this animal he was going well and working every day.

I have operated on several other cases quite recently, but at this time will not report on them, as I have not had an opportunity of seeing the results. You will, therefore, see that in two cases of chronic periostosis of fetlock the result in both cases was negative, but ankylosis was present, hence a mechanical lameness remained.

One case of navicular disease, result successful. I do not

wish it to be interpreted that I prefer this operation for navicular arthritis, but the case was experimental, and I give the results.

Four cases of chronic tendonitis, all successful. Some advocates of the operation claim that it is indicated in any of the chronic conditions from the knee down, exostosis on the knee, cannon, fetlock and foot, providing no ankylosis is present, and the lesions are on the inner side of the limb. About many of these I cannot express an opinion, as I have not operated upon this class of case. But there is a class of chronic cases often seen in heavy horses (chronic tendonitis) in which condition the animal is practically useless, where firing and blistering is often ineffective, and I do believe that in this class of cases if you perform median neurectomy you will be rewarded by very gratifying results.

In concluding I would say that you must use good judgment in the selection of your cases. Do not select cases where it is not indicated and then condemn the operation because the results are negative. And, again, on the other hand, do not operate on cases where it is unnecessary, where other forms of treatment would give relief.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

DID TUBERCULIN MISLEAD IN THIS CASE?

By A. W. BAKER, V. S., Brasher Falls, N. Y.

In regard to the article on "Foreign Bodies," by Dr. Francis Abele, I report the following interesting case that have occurred in my practice:

Last spring I was called to see a cow that had a chronic cough for about two years, and had been tested with tuberculin in the meantime and pronounced tuberculous. The owner refused to destroy her, and after a while he noticed a small enlargement above and posterior to the elbow; it grew very fast.

I was called in and upon examination found the enlargement about the size of a quart measure and fluctuating. I decided to operate and cast the cow and upon making an incision removed 30 ounces of putrid pus. When probing the cavity I felt something very hard between two ribs, which when removed proved to be the metallic part of a shoemaker's awl. Do you think that this passed through the lungs and caused the cough? I have since tested the animal and received no indication of a reaction.

WHAT HAPPENED TO A LITTLE KITTEN, AND HOW HIS LIFE WAS SAVED.

By E. M. BECKLEY, D.V.S., Meriden, Conn.

May 12th a M^r. Haager brought to me a seven weeks old kitten, saying something ailed it, and when he rubbed its throat it would scratch and bite. I felt its throat, and about half way between throat and chest a pointed object could be detected. I so informed him, and that it would be necessary to open the œsophagus and take it out. After a time he gave consent but thought I would kill the kitten. I clipped the hair close and made an incision over the object, and took out this hat pin, which I send you. It swallowed it head first, and had been in the kitten's stomach and intestines a number of hours before it came to me. The kitten has made a complete recovery and is ready to swallow anything that comes his way. The kitten was seven weeks old the day I took out the pin. It measured from its head to its rump $9\frac{1}{2}$ inches. The hat pin measured $5\frac{7}{8}$ inches. Put the pin with your collection of specimens.

DEPARTMENT OF SURGERY.

By L. A. AND E. MERILLAT,
of the McKillip Veterinary College, Chicago, Ill.

INTESTINAL SUTURES (CONTINUED FROM PAGE 218).

(2) *Lembert's Suture* (Fig. 8).—This is a method of suturing that is by far more reliable than the one described in No. 3, Vol. XXIV., of the REVIEW, although not so easily applied. It consists of a number of interrupted stitches which never come in contact with the contents of the alimentary canal, and in this way lessens the danger of infection from within. The stitches are passed through the serous and muscular coats and

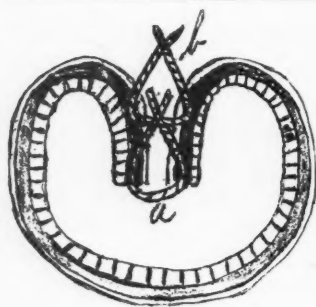


Fig. 4.

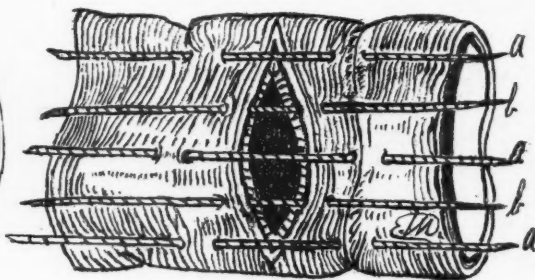


FIG. 5.

CZERNY-LEMBERT SUTURES.

Fig. 4. Lateral view. *a*—Czerny's suture; *b*—Lembert's suture.

Fig. 5. *a*—Lembert's suture; *b*—Czerny's suture.

out again, never penetrating the mucous coat. We shall consider the application of this method in the following operations, viz.:

- (*a*) Intestinal approximations. (*b*) End-to-end anastomoses.
- (*c*) Enterorrhaphy.

(*a*) *Intestinal approximations* (Fig. 8).—In this procedure, the ends of the intestine to be approximated are brought together and the required number of stitches applied; the distance between the stitches being left to the judgment of the operator. The stitches should be made of catgut, which is readily absorbed, leaving no foreign substance in the cicatrix formed by the union of the two ends. The stitches (Fig. 8) are made with a needle armed with catgut and passed through the serous coat into the muscular and along the longitudinal axis of the intestine for a distance of from five to eight millimeters and through the serous coat from within out; the needle is then passed through the serous and into the muscular coat of the other end to be approximated, in the same manner as before; making the point of entrance at the same distance from the edge of this end as the point of exit is from the edge of the other end; this then constitutes one of the ligatures ("stitches") which make up the Lembert suture. This should be repeated until the required number of stitches have been applied. They should then be ligated carefully, one by one, with special care taken to apply uniform tension to them. By ligating them the serous coats of the two ends are brought together and the free edges are turned into the lumen of the intestine. The serous coats readily unite, leaving but a very small cicatrix,

but the internal surface does not have the same synulotic environment; the muscular coats are not held together so firmly as the serous; the mucous coats are not kept in apposition; the wound is exposed to infection from within; foreign substances prevent cicatrization; fæcal matter accumulates at the point of intersection; and, a number of other conditions which have a tendency to make an unfavorable seat for immediate union, could be mentioned in this connection.

The advantages of this method can be summed up as follows: 1. The stitches are not subject to infection from within. 2. They can be applied rapidly, almost as quickly as the most simple method.

Indications:—This method may be used when the operator desires to shorten the procedure, or when the patient's condition is such that it could not endure a long operation.

(b) *End-to-end anastomosis*.—In this form of anastomosis the success of the operation will depend greatly upon the ingenuity of the operator. If the ends to be united are of the same dimensions the operation is as simple as that of approximation; but if one end is larger than the other, the larger one should be reduced to the calibre of the smaller by a longitudinal suture, which can be made by the Lembert method. The application of Lembert's sutures in this operation is the same as in approximation, and the results are the same.

(c) *Enterorrhaphy*.—This is an operation (Fig. 5) which is frequently indicated in veterinary practice, and will be fully described elsewhere. The object of enterotomy is usually to remove some obstruction from the intestinal tract, and should be done carefully, the wound should be well irrigated and made aseptic, and the incision properly stitched. The technique is the same as in other operations, and the stitches are made across the wound (Fig. 5 a), and in ligating them the edges are turned into the intestine, as in Fig. 4.

3. *Czerny's Suture*.—This is a very ingenious method of suturing intestinal wounds, and consists of a series of interrupted stitches (Fig. 5 b) which are made as follows: a needle armed with catgut is passed through the serous coat into the muscular and out of the edge of the wound between the muscular and mucous coats of one end (Fig. 4 a); the needle is then passed into the edge of the other end between the muscular and mucous coats, then through the serous coat at the same distance from this edge of the wound as the point of entrance is from the other edge. This constitutes one of the stitches; which,

when the required number is applied and ligated, completes the Czerny suture. This method holds the serous and muscular coats together and brings the mucous coat in apposition, which is supposed to cover the stitches and prevent them from becoming infected from within; this, however, is not always the case; occasionally the folds are not complete and stitch suppuration follows. It is generally conceded that it is a little more reliable than the Jobert suture, but experienced operators who have tried the Czerny suture and compared its results with those of other sutures do not adopt the method when more reliable ones can be used instead.

With the Lembert suture, it makes the most reliable intestinal suture (Fig. 5), which has been improperly called the Czerny suture by some authors.

4. *Chaput's Suture*.—This method of suturing is seldom used, but is one of the most reliable in suturing intestinal approximations and end-to-end anastomosis. The procedure is long and tedious; the stitches are numerous, and if the technique is correct, the result is reliable. The method consists of three rows of stitches, viz.: (a) Muco-mucous; (b) Musculo-muscular, and (c) Sero-serous sutures.

(a) The muco-mucous sutures are the stitches that are applied to bind the mucous coats of the ends to be approximated.

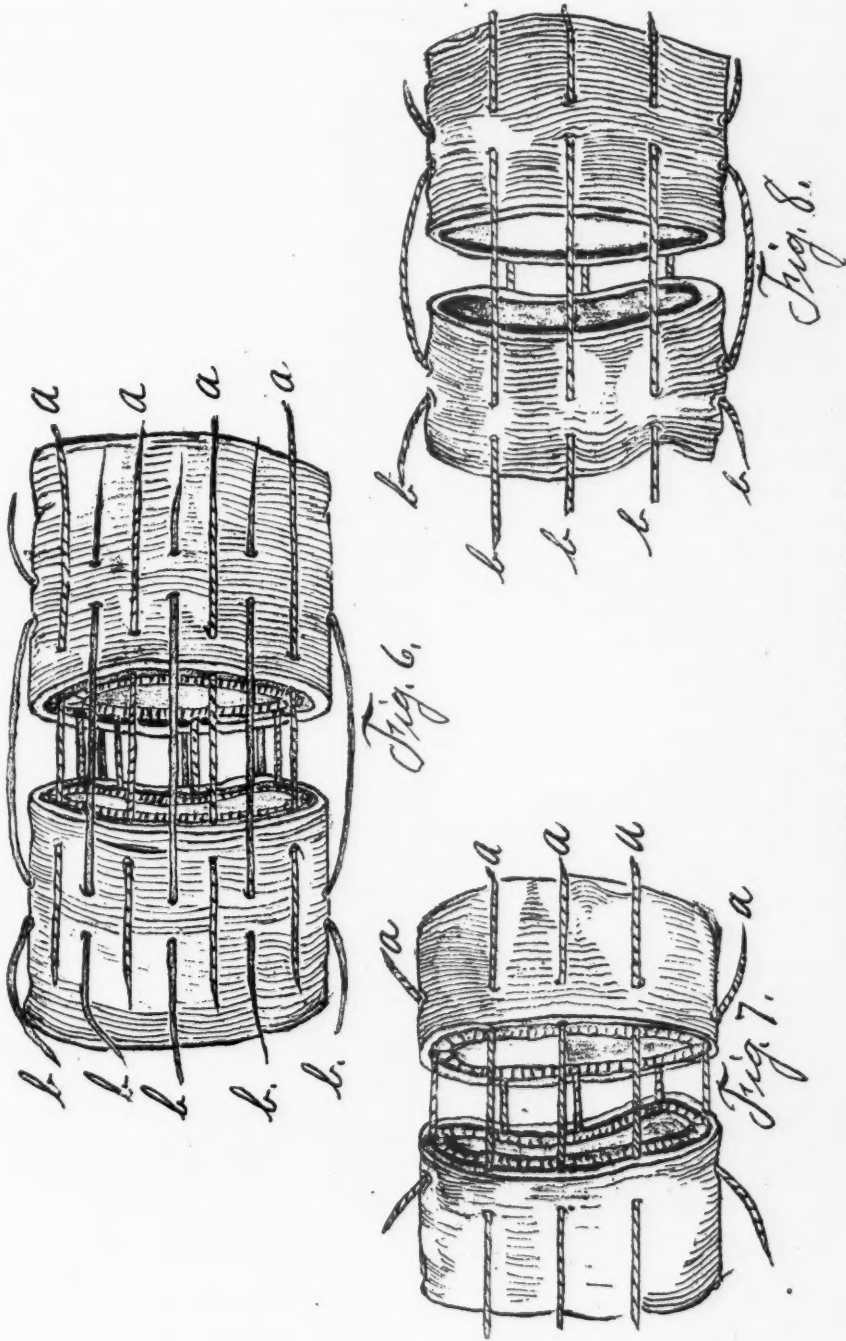
(b) The musculo-muscular sutures are those that are used to bind the muscular coat of each end together.

(c) The sero-serous suture is the suture that is applied to bring the serous coats in apposition.

The ligature used in making the muco-mucous suture may be of silk, but that used in making the other two sutures should be of catgut. The technique in approximations is as follows: divide the mucous from the muscular coat for a distance of one centimetre from the edge of the wound, and with a needle armed with silk or catgut, make the required number of stitches necessary to keep the mucous coat of each end in apposition, having as many stitches ligated in the lumen as possible. The next step is to apply the musculo-muscular suture, which should be made of catgut, and carefully ligated. The third series of stitches should be made carefully, bringing the serous coats together; which, if properly done, will unite, leaving but a small cicatrix.

5. *Czerny-Lembert Suture* (Fig. 4, 5, 6).—This method of making intestinal sutures consists of two rows of interrupted stitches, one surrounding the other; the inner row is made up





INTESTINAL APPROXIMATION.

Fig. 6—Approximation sutured by Czerny-Lembert method; Fig. 7—Approximation sutured by Czerny's method; Fig. 8—Approximation sutured by Lembert's method; *a*—Czerny's stitch; *b*—Lembert's stitch.

of a series of Czerny's stitches which may be of silk or linen ; and the series of stitches that surround it is a Lembert suture, and should be made of catgut, which is absorbed after cicatrization. This is one of the most reliable methods and should be adopted, if possible, whenever intestinal sutures are indicated ; it can be used in approximations (Fig. 6), end-to-end anastomosis and enterorrhaphy (Fig. 5).

The technique is as follows: The stitches of the inner row are made as in the Czerny method (Fig. 4*a*, and 5*b*) ; they are ligated carefully and when completed, a row of Lembert's stitches surrounding it, is applied and ligated ; which, when properly and carefully done, makes a neat and substantial suture. The inner row of stitches bind the mucous and muscular coats of each end or edge together firmly, and relieves the outer row of stitches of part of their strain, and makes a very favorable condition for immediate union.

Ligation of Sutures.—In tying the stitches used in abdominal and intestinal sutures, the following knots are usually selected, viz. :

- (*a*) Granny knot.
- (*b*) Sailor's knot.
- (*c*) Friction knot.
- (*d*) Surgeon's knot.
- (*e*) Combined surgeon and sailor's knot.

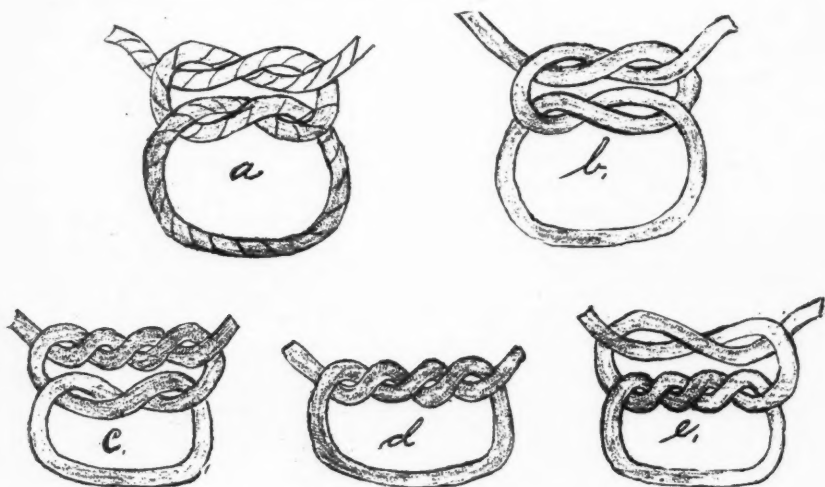


FIG. 9.

a—Granny knot ; *b*—Sailor's knot ; *c*—Friction knot ; *d*—Surgeon's knot ; *e*—Combination, consisting of a surgeon's knot with part of a sailor's knot.

(a) *Granny knot*.—The knot known as the granny knot is a tie consisting of two loops, one upon the other (Fig. 9 a). The loops do not lie in the same line and it often becomes a slip-knot; for this reason it should not be used in ligating sutures unless a third loop is applied.

(b) *Sailor's knot*.—The sailor's knot consists of two loops lying one upon the other in the same line (Fig. 9 b). The ends come out side by side through a vertical loop at each end of the knot, and when drawn up form a square knot. It is sometimes known as the "square or reef knot," and is very reliable in ligating silk, linen or cotton stitches, but not considered so for catgut sutures, and should not be used to ligate catgut stitches that are located where they cannot be watched carefully.

(c) *Friction knot*.—There are a number of ways of making friction knots, but the one most generally used consists of a simple loop to which is added a surgeon's knot (Fig. 9 c), which makes a very good knot to use in ligating catgut stitches. Another method of making a friction knot is by placing one surgeon's knot upon another. The chief objection to this is the size of the knot, which in many instances is supposed to be absorbed. When catgut sutures can be relieved by another suture, the sailor's knot is preferred, but when this cannot be done, the first mentioned knot (Fig. 9 c) should be used in ligating the stitches.

(d) *Surgeon's knot*.—The surgeon's knot is formed by passing the thread twice through the same loop (Fig. 9 d). This knot is used in ligating arteries, and to prevent stitches from slackening while they are being tied. In tying catgut stitches it can be applied to a single loop in order to prevent them from slackening after they have been tied.

(e) *Combined surgeon and sailor's knot*.—This knot consists of two loops; the first is a surgical knot and the second a sailor's knot. It is a knot that is often used instead of the sailor's knot, when the tension of the stitches is likely to slacken before the second loop can be applied, but when this danger is not obvious, the sailor's knot is preferable.

Summary. 1. The *granny knot* should not be used in tying stitches employed in making abdominal or intestinal sutures.

2. The *sailor's knot* should be used in ligating silk, cotton and linen stitches; and catgut, when one suture is relieved by another.

3. The *friction knot* (Fig. 9 c) is the only reliable knot for catgut stitches, and should always be used when the

principal suture is not relieved by a secondary one.

4. The *surgical knot* is used in ligating blood vessels, and to prevent stitches from slackening before the second loop is applied.

5. The *combined surgeon and sailor's knot* should be used in ligating blood vessels, and when stitches are likely to slacken before the knot is completed.

6. When the stitches are to be absorbed, the knot should be made as small as possible in order to obviate the formation of sinuses when the stitches accidentally become incorporated in the cicatrix.

7. The tension of the stitches should be uniform throughout the whole extent of the suture, and just sufficient to bring the edges of the wound together firmly without injuring the tissues through which they pass.

8. External sutures are to be removed from the wound, but the time for this depends much upon circumstances, such as the character of the wound; the condition of the stitches; the nature of the tissue involved and the age and species of the animal. Sutures left in place too long may cut the tissue and cause multiple foci for infection and if taken out too soon the edges of the wound may be torn apart by restoring the natural strain of the tissues involved. If the aseptic precautions were correct and the wound unites by primary intention, the stitches may be removed with safety about the seventh or eighth day.

ABDOMINAL SURGERY.

In reviewing the field of abdominal surgery in domestic animals we must consider the method of performing and the results gained by laparotomy, herniotomy, ovariectomy, castration of cryptorchids and the radical treatment of herniæ; together with all the operations performed upon the organs contained in the abdominal cavity in which the peritoneum is incised. The most common of these are those in which organs are incised, excised, or sutured, and the name of these operations is known by a Greek suffix added to a Greek word referring to the organ or anatomical structure involved; *e. g.*, "*tomy*" added to a Greek word relating to an organ or an anatomical structure, refers to an incision or dissection; "*ectomy*," to an excision or exsection; "*rhapby*," to suturing or stitching; and "*stomy*," to the formation of an artificial opening.

Of recent years the greatest advancement made in human surgery has been in abdominal operations, and in veterinary

surgery more attention has been given to this division of surgery since than before the adoption of aseptic treatment of wounds; of increased precision in operative surgery; of a more comprehensive study of the physiological function of organs; and, of surgical anatomy of domestic animals as an indispensable adjunct to veterinary surgery. The veterinary student who receives proper instruction sees all the major operations performed at appointed clinics, and also has the course of treatment following these operations demonstrated at the daily morning clinic of the surgical ward; and, in this way, he profits by the knowledge gained from the experience of others and improves accordingly; whereas, without these advantages, a few alarming symptoms, dreaded sequelæ or unfavorable results following his first few operations would probably cause him to "drop" surgery henceforth and forever. With a knowledge of the technique of abdominal operations, aseptic and antiseptic surgery, the veterinary surgeon should not hesitate to use such surgical interference when the opportunity presents itself; even though a few genera of domestic animals are not favorable subjects for abdominal surgery. In herbivora, such operations are seldom undertaken, excepting when the indication is the result of accidental injuries or wounds already mentioned in the classification of indications for abdominal surgery (Vol. XXIV., No. 3, Dep't of Surg.) The injuries included in the first classification of indications for such surgical interference in all domestic animals may be divided as follows, viz.:

I. Contusions of the abdomen.

- (1) Subcutaneous rupture of abdominal walls.
- (2) Solution of continuity of blood vessels.

II. Wounds of the abdomen.

1. Non-penetrating wounds.

- (a) Simple wounds.
- (b) Complicated wounds.

2. Penetrating wounds.

- (a) Wounds that divide the parietal portion of peritoneum.
- (b) Wounds with prolapse of viscera.
- (c) Wounds complicated with visceral injury.

I. *Contusions of the Abdomen.*—Contusions are very common in domestic animals, as a result of kicks, treads, collisions and injuries caused by horn thrusts. The condition of these injuries depends very much upon the force of the blow and the nature of the object with which the blow was given. These bruises sometimes inflict subcutaneous wounds which may

cause a hernia, leaving a permanent blemish if not treated properly, but in most cases these bruises are characterized by a hard, firm swelling, caused by the rupture of tissues and blood vessels in the part injured. If the large blood vessels are divided in the abdominal walls, the enlargement which follows is usually a hæmatoma, but often resembles a hernia, and at times it is difficult to make a proper diagnosis in such instances. Mistakes made in this way are very embarrassing, and it is therefore necessary that no blunder be made in the diagnosis of such cases.

1. *Subcutaneous Rupture of Abdominal Walls.*—In herbivorous animals the abdominal walls are always tense, and a forcible blow often divides one or more of the muscular or aponeurotic layers, which may permit the remaining layers and the peritoneum to pass through the rupture; this, however, is more common in the tunica abdominalis than the muscles. A forcible blow, a kick from a horse, or a horn thrust from an ox, will often divide the abdominal tunic, and at times, when the swelling has partly disappeared, a fluctuating mass remains; it is sometimes difficult to determine whether the enlargement is a hernia or an abscess. These enlargements should receive prompt attention. If a hernia, it should be reduced as soon as possible, and if an abscess, should be opened early, and all possible care taken to prevent the formation of a fistula.

2. *Solution of Continuity in Blood Vessels.*—Bruises of the abdominal walls often destroy the continuity of both small and large blood vessels; the swelling is usually located in the part injured if the injury is not severe; but if the injury is serious the swelling may extend to neighboring tissues, and be characterized by a firm, painful area, or a fluctuating mass associated with œdema, which gravitates downward to the lower part of the abdomen; but when the larger blood vessels are ruptured the enlargement that follows is usually a hæmatoma, which often has the appearance of a hernia. These hæmatomata are more obstinate than inflammatory enlargements, less liable to be absorbed, and should be treated surgically.

Treatment.—Swellings of recent origin should be treated with cold applications, followed by hot application (fomentations). The cold applications are used to diminish the quantity of blood carried to the part injured; prevent the extravasation and arrest the inflammatory process. The fomentations are to allay pain, reduce swelling and to increase absorption. Disinfectants may be used to prevent infection, and if suppura-

tion follows the abscess should be opened as early as possible. When the inflammatory enlargement is not too extensive, it is usually reabsorbed; but occasionally, when the inflammation has subsided, a fluctuating mass remains, and it is almost impossible to determine whether this is hernia, abscess or a hæmatoma. If in such instances a positive diagnosis cannot be made by manipulation, an exploratory puncture, made with aseptic precaution, will reveal the true condition.

Abscesses and hæmatomata should be opened and treated as wounds requiring drainage (Vol. XXIII, No. 12, Surg. Dept.). Herniæ resulting from the injuries in question may be treated by either the palliative or radical method. In some instances these herniæ are cured by the cicatricial process; but when of long standing they should be treated by either of the above mentioned methods.

II. *Wounds of the Abdomen.*—Wounds in the abdomen, varying from a simple abrasion of the skin to a complete opening of the abdominal cavity, are conditions which the veterinarian may expect to encounter occasionally. These wounds, even though they may appear very insignificant, are often very troublesome, and followed by undesirable sequelæ if not treated surgically and antiseptically. The danger of intestinal protrusion; the extension of fistulæ between the muscles or fasciæ; the formation of multiple abscesses; and the subsequent appearance of peritonitis, are all conditions that are likely to follow abdominal wounds.

If an abdominal wound in a large herbivorous animal is large enough to allow part of the viscera to pass through the opening in the anatomical structures of the abdominal walls caused by the wound, the task of cleansing the prolapse without inflicting additional injury; of returning the prolapsed portion of the viscera without introducing foreign and septic material into the cavity; of retaining the part prolapsed in the cavity when returned into it until the continuity of the anatomical structures divided by the wound is restored; of adopting means of keeping the patient quiet; and of preventing him from interfering with the sutures or retarding the reparatory process in any manner, is not an easy one.

The formation of fistulæ in the abdominal walls is a common result following abdominal wounds in herbivora; due to the peculiar anatomical structure of the walls; the skin, the panniculus carnosus, the tunica abdominalis, the external and internal oblique, the rectus and transverse muscles with their

respective aponeurotic portion are all separated from one another by connective tissues (areolar), which is a favorable soil for the development of pus cocci when introduced; the pus organisms burrow in these layers and form fistulæ which often divide into numerous branches gravitating downward to the lower part of the abdomen. These fistulæ often follow the puncturing of intestines (*punctio intestini*) of horses to relieve tympanites, and is the one sequel dreaded by all veterinarians who have ever had any experience in that "line." The existence of an abscess at the point punctured is generally followed by the formation of one or more fistulæ which are very obstinate and do not yield to treatment unless prompt and vigorous measures are adopted as soon as they begin to form. If the development of these fistulæ is not arrested as soon as possible, they eventually extend downward as far as the scrotum or mammæ; and sometimes they are followed by a number of secondary abscesses and local peritonitis which may terminate fatally in the course of several weeks. The secondary abscesses always break open in the direction of the least resistance; if located in the connective tissue between the rectus and the transversalis abdominis, peritonitis invariably follows and terminates fatally much sooner than when located between other muscles. When a fistula is located between the oblique muscles or the external oblique and the abdominal tunic the fatal or favorable termination is deferred; the course is slow and progressive; the symptoms and condition of the patient indicate septic intoxication, which is followed by septic infection; and the fatal termination is caused by some complication resulting from septicæmia. The formation of an abscess following a puncture, whether made with a trocar or accidentally, should not be neglected, but opened promptly and treated as an open wound, to prevent the formation of fistulæ.

The same conditions follow abdominal wounds located in the abdominal tunic, a structure composed of white fibrous and yellow elastic tissue (principally yellow elastic), which is expanded over the lower part of the abdomen and the lateral walls; its function is to assist the abdominal muscles in supporting the large abdominal viscera common to herbivorous animals; its conformation and composition favor it in adapting itself to the varying volume of the contents of the abdominal cavity; it is thickest posteriorly and near the linea alba, and becomes gradually thinner as it extends outward and upward over the lateral walls, and is located between the external ob-

lique muscle and its aponeurotic portion internally, and the panniculus carnosus and the skin externally. A well developed layer of connective tissue is located between it and its surrounding structures at its thickest portion; the thinner portion is closely united to the fascia of the external oblique muscle. These layers of connective tissue are favorable places for pus to burrow, which makes the treatment of wounds localized in this region difficult to treat and the result of the treatment unsatisfactory.

Most of the wounds in this region are caused by animals jumping fences, gates or stable doors; forcible blows, such as horse kicks, horn thrusts and falls upon sharp or pointed objects; together with punctures inflicted by attendants with pitchforks or other sharp and pointed implements; and are all wounds that have been inflicted by or with objects that are likely to carry infection, and as a natural consequence require antiseptic treatment.

In carnivorous animals the abdominal tunic is not well developed; it consists of a thin layer of fibrous tissue; the walls are not tense; wounds are not common; and the treatment is generally satisfactory. Abdominal wounds in the dog are not serious if given prompt attention.

(To be continued.)

ALWAYS! ALWAYS! ALWAYS!

1. Always avoid the use of suspicious instruments.
2. Always sterilize your instruments by boiling them in water.
3. Always keep your instruments in an aseptic case.
4. Always keep your instruments in an antiseptic solution while operating.
5. Always consider your operating room incomplete without a sterilizer.
6. Always disinfect or sterilize instruments or dressings that have fallen upon the floor, your clothing or the external surface of the patient, before using them again.
7. Always disinfect the skin surrounding the seat of operation before making a surgical wound.
8. Always disinfect your hands and nails, remove your rings and cuffs, and pull up your sleeves before operating.
9. Always include soap and hot water with your important disinfectants.

10. Always avoid the introduction of fingers and hand into a surgical wound unnecessarily.
11. Always arrest all hæmorrhage before stitching a wound or applying a surgical dressing to it.
12. Always sterilize your sponges and dressings before applying them to a surgical wound.
13. Always ligate arteries, and large veins that are located near a venous trunk.
14. Always arrest capillary hæmorrhage by irrigating the wound with hot or cold water, or by the application of astringents.
15. Always have all the instruments required for the operation you are going to perform in a pan or tray, immersed in a strong antiseptic solution, and located within reaching distance.
16. Always improvise instruments when the required one is not at hand.
17. Always perform your operation in the *most simple possible* manner.
18. Always operate as if you "knew your business"—had an object in view, and were determined to accomplish it.

EXTRACTS FROM EXCHANGES.

BELGIAN REVIEW.

ENORMOUS VENTRAL HERNIA IN A FILLY—RADICAL RECOVERY [*By Prof. F. Hendrickx*].—After reviewing briefly the various treatments recommended in these cases, the author relates that of a five-months-old filly affected with a hernia on the right side, which extended from the external border of the ilio-spinalis to a level with the stifle, and from the circle of the false ribs to the external angle of the ilium. It measured 87 centimetres from above below, and 43 from forward backward. The hernial ring was 18 to 20 centimetres in its large diameter and its border 12 to 14 apart. The animal was cast, chloroformed and the region carefully disinfected. The skin divided exposed a few intestinal circumvolutions, which were reduced and kept within the abdomen with a cloth moist with phenic solution. A strong suture was applied on the middle of the two edges, which closed the opening only partly. Then a series of stitches (20 in number) were applied, starting from the

upper commissure of the ring downwards, and perfect adaptations of the borders obtained. But as some of these had a tendency to cut through the muscular fibres, a second row of sutures, less in number, was applied, taking a greater amount of tissue on each border. The wound was thoroughly disinfected with Van Swieten solution and the skin sewed with separated sutures, after amputating a certain amount of superfluous tissue on each border. During the first five days the filly showed symptoms which caused fears of the possibility of peritonitis, but she recovered from them. On the tenth day the deep sutures were removed and the superficial wound was treated antiseptically. Twenty-eight days after the operation there remained but a small cutaneous sore which gradually diminished and the little animal was discharged.—(*Annales de Bruxelles*.)

TYMPANITIS OF THE GUTTURAL POUCHES [*By Prof. A. Dégivé*].—Referring to a similar case reported in the *Annales*, the author relates two cases which had come under his observation and treated by him recovered; after three months in the first case and five weeks in the second. From his consideration of these cases Prof. Dégivé is of the opinion that (1) pneumatose of the guttural pouches is the result of a retention, or prolonged gaseous pressure; (2) that the collected gas is most generally produced in the cavity, from an alteration in the secretion of the mucous membrane; (3) that the retention of gases may depend exclusively upon a special disposition of the pharyngeal opening in its normal state. There are three means of treatment: (1) *Incision of the pouch*, which he performs in the lower third of the swelling and following the great axis of the parotid gland. This must be kept open at least five weeks. (2) *Antiseptic injections*, which are all good,—tepid solutions being better than the cold ones. (3) *Enlarging of the pharyngeal opening*, which he considers really useful only in two conditions: when there is a marked stricture, accidental or congenital, of the guttural orifice, or where recovery has not been obtained with the two other methods.—(*Annales de Bruxelles*.)

SINGULAR ACCIDENT OF SPAYING IN A COW [*By N. Bald*].—In the operation of castration in cows, Prof. Dégivé has introduced for some time back a modification which consists in the application of an elastic ligature on the support of the ovary, which is secured against untying by a small glass pearl. The author had two animals to operate on. In one, with the exception of one ovary being torn away before the elastic ring

had been applied, while these had to be put on afterwards to prevent bleeding, everything went well and the results were satisfactory. In the other there was no trouble and the animal recovered in a few days and remained in that condition for about two weeks, when she began to be excited and exhibited symptoms of nymphomania. She rapidly grew worse, became dangerous and was going to be destroyed when she got severely injured and was ultimately sent to the abattoir. At the autopsy the left side was found in good condition; elastic ring and pearl well in place and, so to speak, encysted in a fibrous mass containing the atrophied ovary. But on the left the ovary, elastic ring and pearl were there also, but the ovary was greatly congested and engorged, and about twice its normal size; the ring was, it is true, around the utero-ovarian ligament, but loose, and the pearl was broken in some twenty little pieces, floating in pus.—(*Annales de Bruxelles.*)

SPONTANEOUS RUPTURE OF THE PERFORATUS TENDON IN A HORSE [*By Prof. T. Hendrickx*].—The author calls this rupture spontaneous as being a solution of continuity of a tendon occurring without well marked traumatic cause. It is the history of a large draught horse which was placed under his care suffering with pneumo-enteritis. Although he recovered from this, he had a peculiar gait. Sent back to work, he was, after ten days, brought back to the Hospital of the Veterinary School of Cureghem, suffering with purpura. Failing to get good results from the serum treatment, Prof. Hendrickx resorted to the use of argentum colloïdate, so much recommended by German authors. After an injection the improvement was well manifest, but then appeared the last complication. The animal stood peculiarly on his right hind leg, the fetlock had dropped, the hock was extended and the os calcis much lower on the right than on the left side. Made to move, the manifestations were becoming more assured, the animal rested with the fetlock on the ground and the os calcis dropped still farther down. The animal was destroyed. On dissecting the right hind leg, it was found that the perforatus was completely ruptured a little above the fetlock, on a point corresponding to the spot where it forms a ring for the passage of the perforans. The ends of the tendon were irregular, with disassociated fibres and hæmorrhagic points. Similar lesions existed on the left leg also, but to a lesser extent. The texture of the tendon was quite firm, with hæmorrhagic spots and even a beginning of rupture. Had the animal lived, the same symptoms would

have also been observed as they had been on the right leg.—
(*Annales de Bruxelles.*)

FRENCH REVIEW.

ESCAPE AND RESORPTION OF TWO FŒTUSES IN THE ABDOMINAL CAVITY OF A SLUT [*By M. L. Blanc*].—A hunting slut had become sick a few days after giving birth to two puppies. She was dull, quiet, without any apparent pain; her abdomen had become very large and fluctuating; she became cachectic and died. At the post-mortem, on opening the abdomen, about two litres of thick, reddish fluid, almost odorless, was found, in which floated a large number of black and greyish hairs, some single, others gathered round a hard substance and forming round or oval agagropiles of various sizes. These were situated a little everywhere between the abdominal wall and the intestines, between the intestinal circumvolutions and even between the liver and the diaphragm. Besides these little masses of hairs and bones were also found—the bones (ribs, cranial and some of the extremities) were free from soft parts. Loose nuclei of ossification of the vertebræ and finally two small foetal heads at times were discovered in the fold of the mesentery. All these pieces were perfectly macerated; there were no soft tissues, only the hairs remained. On examining the uterus, the right horn showed two ovoid swellings between which existed a gaping laceration, with colorless borders, from which escaped a few hairs similar to those found in the abdomen. Other lesions less important and not related to the injury of the uterus were also found; but all the other organs were healthy.—
(*Journ. de Zootechnie.*)

WOUND OF THE CHEST—DEATH BY SECONDARY HÆMORRHAGE [*By E. Nard and P. Bergeon*].—A mare received a blow from an English cart, and one of the shafts entered the chest between the shoulder and the thorax on a level with the point of the shoulder. The shaft broke and remained in the wound. Abundant hæmorrhage took place, and at every movement of the animal a peculiar sucking noise was heard. Although the prospects of recovery seemed doubtful, the wound was packed with hydrophite cotton and the hæmorrhage arrested. With a great deal of difficulty, after removing the plug of cotton, the piece of shaft was extracted. It measured 27 centimetres in length. The wound was treated with a great deal of antiseptic measures and everything seemed to progress favorably,

when one morning, nine days after the accident, she was found dead in her stall early in the morning. At the post-mortem lacerations of the paniculus, mastoido-humeralis, and great pectoral muscles were found; the whole leg was much infiltrated; the muscles between the leg and the chest were all filled with clots of decomposed blood, the anterior circumflex artery, the external collateral of the elbow and their veins had been lacerated with the shaft, and finally the subscapular artery and that of the great dorsal with their veins had also been lacerated. All those blood vessels had been plugged at the time of the accident; they had been temporarily closed by a clot of blood, but by degrees this clot had become resorbed or loose, and the fatal hæmorrhage had returned.—(*Journ. de Zoö-technie.*)

LACERATION OF THE UTERUS—RECOVERY [*By G. Petit*].—Although not due to deliver for two weeks to come, a Normandy cow is taken with violent colic, accompanied by expulsive efforts. Vaginal examination revealed a posterior presentation in lumbo-sacral position, and also a deep laceration of the uterus, some 10 centimetres long, situated on a level with the right hock of the foetus. The intestinal circumvolutions were readily felt through the laceration. The tendo-Achilles of the right hock was divided and the tibia being extended upon the femur, the removal of the foetus was easily completed. The uterine cavity was made aseptic by plugs of iodoformed cotton and a drench of tincture of caramija and coffee was administered to stimulate the expulsion of the placenta and tonify the animal. No other treatment was prescribed, except solution of cresyl to keep the outside clean. In 12 days the recovery was complete.—(*Revue Veterinaire.*)

THREE ATTACKS OF PARTURIENT APOPLEXY IN A COW—[*By M. Ben*].—This is the record of a cow which was successively taken in 1894, 1895, and 1897 with parturient apoplexy. In the first two instances she was treated with general bleeding, frictions of camphorated alcohol on the loins, of mustard on the abdomen and the extremities, with injections of lysol solutions in the uterus and rectal injections of sulphate of soda. At the third attack the author resorted to the treatment of Hartenstein, cold applications on the loins and on the head, bleeding at the tail, lysol injections in the uterus, sodæ sulphate enemas, mustard frictions on the extremities and on the abdomen. After a few days she was convalescent, and exhibited symptoms of pneumonia, from which she recovered after some time. She

became pregnant a fourth time, and fearing another attack which might not be as successful as the preceding, the owner sold her for the butchery.—(*Revue Veterinaire.*)

AN INTERESTING CASE OF RENAL ABSCESS IN THE HORSE —[*By L. Colin*].—This was a very lean animal, which for a few days refused his food and passed frequently a muddy, whitish urine. He was very dull and often stood with his four legs brought close together, his back arched. Urine was expelled with difficulty. The animal died after a short time. At the autopsy the right kidney was found healthy and weighing 700 grammes. The left was very large, weighed 1400 grammes and bosselated on its posterior extremity. It was continued by a large pouch extending as far as the entrance of the pelvis. Situated under the transverse processes to the lumbar vertebrae, this pouch was 14 centimetres long and 10 high. It contained 3 litres of clear, white yellowish fluid without foetid odor. The substance of the kidney was in direct communication with the pouch by an opening as large as the small finger. Its cortical portion was hollowed with cavities filled with *sui generis* pus.—(*Rec. de Med. Vet.*)

NECROSIS OF THE TURBINATED BONES OF A HORSE—SURGICAL TREATMENT—REMOVAL OF THE DISEASED BONES AND PUNCHING OUT OF A MOLAR [By *M. Breton*].—A nine-year-old horse was brought to the clinic of Alfort, suffering with nasal polypus. When examined, roaring was heard in both steps of respiration; there was discharge from both nostrils of a muco-purulent nature, and in the right this discharge was foetid and bloody. On this side of the face there was a hard, painless swelling, evidently filling the superior maxillary bone below the turbinated. The left side was normal. The mucous membrane on the right nasal cavity was red and inflamed. The superior turbinated was swollen, its surface rough and covered with hard deposits of various sizes, some of the bony pieces sloughing out. The breath was very foetid and characteristic of dental caries, the third upper molar was partly broken off and hollowed, with a wide cavity filled with putrefied food—maxillary glands were swollen. The diagnosis of necrosis of the turbinated by dental caries was evident. Surgical interference was indicated. After chloralization it consisted in: slitting open the nostril by excision of the false nostril, removal of a portion of the diseased bone; at this moment it was necessary to perform tracheotomy; then the upper bony wall of the nasal cavity was opened and the remainder of the tur-

binated removed. As the animal had lost an enormous quantity of blood, and the hæmorrhage was still going on, hemostatic measures were applied and further interference postponed. A week after the lower turbinated was removed and the diseased tooth removed by punching it out. The after cares consisted in antiseptic measures as thorough as possible, and after a complication of collection of pus in the left sinus, which received the ordinary treatment, the horse was discharged cured.—(*Rec. de Med. Vet.*)

AMERICAN SUNDRIES FROM FRENCH REPORTS.

SHREWDNESS OF A PARISIAN.—An American who lived in Paris for some ten years reports a remembrance of his stay in the great city. Every time he passed one of the bridges that crossed the Seine, a dog covered with mud would come and roll himself on his shining boots. At the other extremity of the bridge was a boot black (perhaps a negro) who on seeing him offered his services. The first time the gentleman did not pay attention and got a shine. But the next day and the one after the same thing occurred—same muddy dog, same soiled shoes, same offer from the boot black. Watching the dog, he soon observed that the dog was thoroughly broken to this work, and only rubbed himself on polished shoes; those of poor people he respected. The dog could not be bought, notwithstanding very generous offers made to his owner.—(*L'Eleveur-Semaine Vet.*)

A MUSICAL COW.—*The Petit Courrier* records this from New York. On a farm strange, devilish noises were heard at night coming from a stable, where a horse, a dog, and a cow were enclosed. However, these noises were neither the neighing of a horse, the barking of a dog, nor the bellowing of a cow. What was it? Everybody was frightened. One day, the village butcher bought the cow, killed it and found the cause of the trouble. The cow had swallowed an harmonica. How, no one knew, but when at night she ruminated the air entering the stomach made the notes of the instrument resound. The noises were heard only at night, because the cow was out all day and only kept in after dark. There was a fortune in her, and the owner did not know it.—(*Semaine Vet.*)

SPEAKING MONKEY—Again from America, the *Eleveur* says: A certain Hopkins (not the veterinarian) has succeeded in making his monkey Raisy pronounce a respectable quantity

of words which he says at the proper moment, and perhaps also when he ought not. Besides this, the intellectual monkey eats as a man from morning to the time of going to bed.—(*Semaine Vet.*)

FILLING AN ELEPHANT'S TOOTH.—The serious paper, *Journal des Debats*, reports the case as follows: "Four men took hold of Big Tom (how powerful they must have been!), threw him down, secured his legs, his trunk, and with ropes kept his mouth open. The diseased molar appeared, hollowed with a large black hole, big enough for an orange to go in. The American dentist cleaned it with a spoon, scraped it, disinfected it with an antiseptic solution, and with heavy blows of a hammer plugged the tooth with some seven or eight pounds of amalgam."—(*Semaine Vet.*)

COLLEGE COMMENCEMENTS.

NEW YORK-AMERICAN VETERINARY COLLEGE.

Although the examinations occurred in April, when the graduates received certificates, the diplomas were not awarded until June 7, when New York University held commencement exercises for all the schools connected with it. On the 6th the School of Applied Sciences, and the College of Arts and Pure Science held their exercises at University Heights. On the 7th the School of Law, the School of Medicine, the Graduate School, the School of Pedagogy, and the Veterinary College held their exercises at the Metropolitan Opera House, and this vast building, probably the largest in America, was filled to the top galleries. The following gentlemen had been recommended to the Council of the University for graduation: Charles Edward Clifford Atkins, Bridgeport, Conn.; Joseph L. Drexler, Thibodaux, La.; Adolph Eichhorn, New York City; J. William Fink, New York City; John Joseph Hayes, Jr., New York City; William Henry Hayes, New York City; Daniel Joseph Morgan, New York City; Rudolph Frederick Meiners, Rutherford, N. J.; James Edward Norton, Jr.; Glen Cove, L. I.; James Henry Prophet, Suffield, Conn.; William Arthur Young, Utica, N. Y.

The faculty prize of a gold medal for the best general examination was awarded Dr. Drexler; the Alumni prize for the next best to Dr. Young, and the silver medal for the best junior examination to Mr. O. Barnett, of Newark, N. J.

At the close of the exercises a large number of the alumni

and friends of the school repaired to the Hotel Marlborough, a few blocks below, where a delightful banquet had been prepared, and where an enjoyable evening was spent. Addresses were made by Chancellor MacCracken, Dr. Munn, Professors Coates, Bell, Stein, Lellman, Drs. Hoskins, Lowe, Ellis, Hanson, and others.

NEW YORK STATE VETERINARY COLLEGE.

At the annual commencement of Cornell University, Ithaca, N. Y., the following received the degree of Doctor of Veterinary Medicine: Clarence Lyon Barnes, Lockport, N. Y.; John W. Corrigan, V. S., Owego, N. Y.; Grant Sherman Hopkins, D. Sc., B. S., Westport, N. Y.; C. H. Jewell, Slaterville Springs, N. Y.; Louis Juliand, Greene, N. Y.; William John Mitchell, Ithaca, N. Y.; Garry T. Stone, Binghamton, N. Y.

The Horace K. White prizes of \$15 and \$10 to the most meritorious students in the graduating class were awarded as follows: 1st, Clarence Lyon Barnes; 2d, Garry T. Stone.

The theses of the graduates, all in part founded on original research, were: C. L. Barnes, "Laryngeal Hemiplegia; Roaring, and Old and New Methods of Treatment"; J. W. Corrigan, "Melanosis and Melanoma"; Grant S. Hopkins, "The Brachial Plexus in Monodactyle and Polydactyle"; Chas. H. Jewell, "Ovariectomy in Domestic Animals"; Louis Juliand, "Aloin as a Purgative"; William J. Mitchell, "Bacteria in the Female Generative Organs"; Garry T. Stone, "Tuberculin and its Uses in Diagnosis."

CORRESPONDENCE.

THE PROFESSION IN MICHIGAN.

RICHMOND, MICH., June 6, 1900.

Editors American Veterinary Review:

DEAR SIRS:—In several recent issues of one of our veterinary journals there have appeared editorials and other articles unjustly (I was going to say maliciously) reflecting upon the profession in this State. To set the matter right before those who have read the articles referred to, and in justice to the recognized members of the profession in Michigan, I would say that the attacks are misleading and false. There has never been a time in the history of our State association when there was more harmony and good fellowship than at present, all statements to the contrary notwithstanding. It is true there

are disturbing elements here, but I wish it understood that it is all (excepting one renegade) outside of the recognized members of the profession.

I would say farther that our State Veterinarian has the confidence and esteem of all the veterinarians of the State, notwithstanding attacks made upon him in a certain locality.

Sincerely, JUDSON BLACK.

SOCIETY MEETINGS.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

Meeting called to order by President H. Shipley, of Sheldon, Ia., at Des Moines, January 10, at 10.15 A. M. The following members were in attendance: Drs. C. A. Ashworth, Asheeva; A. S. Boodie, Cedar Falls; J. I. Gibson, Denison; W. H. Austin, Newton; R. R. Hammond, Le Mars; J. E. Brown, Oskaloosa; F. H. P. Edwards, Iowa City; W. A. Heck, Maquoketa; C. J. Hinkley, Odebolt; G. A. Johnson, Sioux City; P. O. Koto, Forest City; S. K. Hazlet, Oelwein; S. H. Johnston, Carroll; J. F. Kennedy, Des Moines; P. Malcolm, New Hampton; G. E. Noble, Osage; W. B. Niles, Ames; F. J. Neiman, Marshalltown; F. M. Roys, Manning; D. H. Miller, Harlan; M. Stalker, Ames; E. E. Sayers, Algona; H. Shipley, Sheldon; R. C. Sayers, Fairfield; S. Stewart, Kansas City, Kas.; J. H. McLeod, Charles City; J. O. Simcoke, Stewart; H. E. Titus, Maxwell; H. L. Stewart, Oakley; H. E. Talbot, Des Moines; C. E. Stewart, Chariton. Visitors: Drs. D. E. Baughman, Fort Dodge; W. A. McClanahan, Redding; G. Lames, Dysart; J. J. Repp, Ames; J. J. Moore, Lamoni; Hal. C. Simpson, Denison; E. H. Shuttleworth, Nevada; J. R. Sanders, Corydon; Barton Rogers, Ames.

Minutes of the previous meeting were read and approved.

President Shipley then addressed the meeting, saying in part:

"In August, 1887, a few veterinarians met at Ames, Iowa, for the purpose of organizing a State veterinary association. In looking around the State we found that there were at that time twenty-six graduates. Sixteen of that number were present. We were nicely entertained by Professor Stalker and other members of the college faculty, and at that interesting meeting the organization of this association was completed. It was de-

cided to hold the next meeting at Des Moines, and each member went to work to do what he could to add to the interest and promotion of the venture. We found many discouraging conditions to contend with. The quacks on every hand were ready to knife us, and the stockmen in general did not seem to realize the difference between the 'cross roads hoss doctor,' and the veterinary surgeon, and gave us but little encouragement; however, we have kept pounding away until the veterinary science has forced the quack from the middle of the road, and the stockmen have come to recognize us as their best friends. Our association has grown from year to year in membership, in interest and influence, until to-day it is second to none. Perhaps some of our older members have not been taking the interest in association work that they should during the last few years, but there have been many younger members added to our list who are well qualified to care for its interests. Veterinary legislation has been a prolific source of discussion at our meetings. In this line little has been accomplished. The opposition we have had to contend with seemed to outweigh us by just a little, and some who were appointed by this body to guard its interests may have found it more convenient to secure their own personal ends than the general and substantial interests of the association, and the dignity of the profession, and the measures proposed or suggested by this association for the benefit of the profession, became trading stock. Do not misunderstand me; I do not say that all these committees have had other measures in which they became more interested, nor that all the members of any one committee has; but I do say that with the amount of work laid out, if properly done, more should have been accomplished. Let us start the year 1900 with renewed energy. Many people have changed their minds with respect to our profession; they find we are not as bad as the quacks have represented us to be, and, in fact, all the intelligent stockmen are now our friends. Few men are so perverse or so dull that they cannot grasp and appreciate the difference between a scientific demonstration in the treatment of domestic animals and the methods generally adopted by the quacks. Where an opportunity has been given, I have found very little trouble in convincing them that some changes or amendments should be made to present laws for their own protection. The regulation of and protection from contagious diseases quite as much as the regulation of the practice of veterinary medicine and surgery. Who is better qualified to ad-

vise the legislature on such subjects than the man who has made veterinary surgery and therapeutics his one subject of investigation? Who knows better than the veterinarian the extent to which the public is imposed upon in the domestic animal industry and traffic? You should not let a chance go by to impress the great importance of such matters upon the minds of the members of our legislature from your districts, nor neglect to explain them when opportunity offers in the sessions of your farmers' institutes. By so doing you will be rendering a lasting benefit to mankind and honoring your profession. There never was a time when the importance of controlling the spread of contagious diseases, and the protection of the human family from the use of diseased meats marketed by unscrupulous persons, was more urgent than just now. For the first, herds and dairies should be placed under the supervision of skilled veterinarians. For the second, the system of meat inspection imposed by foreign and home governments must be extended to every slaughter-house and meat market in the land. It will not suffice to establish inspection in the larger towns and neglect the smaller, for the real danger lies there. There is where the unthrifty and diseased cattle that no packing house would use find a market, are butchered and peddled out by the quarter. Be it said to the everlasting shame of some butchers, that they buy such meat with the full knowledge of its condition, because it can be gotten very much cheaper, and because there is no way in which they can be caught at it and punished for the crime. I draw these conclusions both from personal observation and reliable information from different sources. I have no particular method or pet hobby to suggest as to how to accomplish these two vital things, but I say to you, that when this body shall have found a way and enforced it by the aid of intelligent legislation, you will have rendered a greater service to your neighbors, both with respect to person and property than veterinary skill can possibly render under present conditions."

Dr. S. H. Johnston opened the discussion, and spoke on the subject of legislation; thought we should have something in the way of a *practice act*, but did not believe it advisable to attempt any radical measure.

Dr. Gibson followed, saying we should have such a law, and as one of our members (Dr. Koto) is a member of the House, now is a good time to try for it; said Dr. Koto would like to hear the voice of the association on the subject.

Dr. Repp spoke, saying a measure should not be too radical ; should provide for empirics who had been in regular practice for a certain length of time. After that certain examinations should be imposed upon those who desired to begin practicing. He referred to some of the provisions of the Pennsylvania veterinary law, etc.

Dr. Malcolm favored an act which would require registration—non-graduates to register as such, and then the public will not be deceived.

Dr. Heck favored registration, and issuance of a certificate, showing whether the applicant was a graduate or non-graduate; believed the two kinds of certificates should be printed on different colored paper.

Dr. S. H. Johnston said there was a time when the non-graduates were a necessity, for there were no graduates. Those people should be treated justly, and such as have been practicing for a long time should be permitted to continue, but his idea was to prevent new men of the same type beginning.

Dr. Brown moved, and Dr. Hammond seconded, that the matter be referred to the Judicial Committee, and that at a later session they should report as to the advisability of attempting to get some law enacted at this session of the legislature, and if they decide in the affirmative to report an outline for same. Voted and carried. President Shipley then appointed Dr. Hammond to fill vacancy on Board of Censors, and the applications for membership were referred to them.

Meeting then adjourned to meet at 1.30 P.M.

Afternoon Session.—Meeting called to order by President Shipley. The Board of Censors reported favorably on the applications for membership of D. E. Baughman, D. V. S., of Fort Dodge, Ia. ; J. J. Repp, V. M. D., of Ames ; J. R. Sanders, M. D. C., of Corydon ; G. Lames, D. V. S., of Dysart ; G. Kerr, V. S., of Washington ; Hal. C. Simpson, D. V. S., of Denison, and J. J. Moore, V. S., and the gentlemen were duly elected to membership.

On motion by Dr. Gibson the chair appointed a Committee on Resolutions, as follows : Drs. J. I. Gibson, W. H. Austin, and R. R. Hammond.

The report of the Secretary was then called for, and was read as follows :

"GENTLEMEN : We meet to-day to celebrate the twelfth annual meeting of our association—to participate in the privileges, the pleasures and the benefits which may be derived

from a real live veterinary association meeting. As your Secretary, it affords me great pleasure to be able to come before you bearing tidings of prosperity from the profession in general. The prosperity with which our country has been blessed during the past year has been shared and appreciated by the members of the profession. Almost without exception the letters that have come to me from veterinarians during the past year have spoken of an increasing business. I have made no systematic estimate, but I feel sure that I am perfectly safe in saying that the volume of the veterinary business done in Iowa during 1899 exceeded by fully 25 per cent. that of any previous year. During the seven years that I have served as Secretary of this association I have endeavored to keep a record of the names of all veterinarians in the State, with the name of the college from which they graduated, and the date of graduation. On this record I now find 249 names. Of this number, probably less than 150 are resident practitioners at the present time. The others have either moved into other States or taken up other lines of business. During a period of time prior to the decline in the value of live stock, which occurred about 1893, the comparatively few veterinarians who were then practicing in the State were enjoying a very lucrative business. Horses, especially, were selling at high prices, and when occasion demanded our farmer friends and stockmen sought eagerly for the services of good veterinary surgeons, and were willing to pay a good fee for the services rendered. This state of things soon brought a large number of new men into the profession. Many young men who had never had any previous training or experience in handling live stock, and who had no natural tact for such work, took up the study of veterinary science with a view to preparing themselves for the practice of the profession. Many of these fellows were theoretically bright, and graduated from the colleges with high honors, but soon found themselves—or others found them—to be utterly incapable of applying their theory to practical purposes. Thus it has been that many of the men who have gone out as graduates have thrown a shadow over the profession by utter failure in practice, simply because of being a misfit in that line of work, where some non-graduate of a practical turn has succeeded much better. In this way, recognizing, of course, the dull seasons following the decline in prices of live stock, we can account for the great fluctuating movements of the veterinarians in Iowa. As a result of these changes our association has suffered also. Many

of these graduates joined the association, but not finding practice sufficiently remunerative, nor the work suited to their liking, have failed to continue their memberships in good standing. Our records show that during the life of the association we have received into membership 147 names, a little less than one-half of whom are members in good standing at the present time. During the past year the association lost one member by death. Dr. C. H. Whitwell, a '96 graduate from the Chicago Veterinary College, practicing at Dubuque, died in November. Dr. Whitwell never attended one of our meetings, but his application for membership was accepted at our annual meeting, held January 13, 1897. With the number of veterinarians now practicing in this State, and the increase that we may reasonably expect with the increase of business, the association should experience a considerable growth in membership during the next few years. Possibly we may be able to offer greater inducements to veterinarians to join us. While we have long enjoyed the reputation of being one of the live organizations of the kind, there is still room for improvement. There is not always that enthusiasm manifested by all our members that insures success. Such has been my experience while preparing our present programme. I think about twenty of our members, when asked to prepare papers for this meeting refused for one cause or another. Our meetings should be made everything along the line of instruction, benefit and pleasure to the members and to the profession that it is possible to make them, and to make them what they should be, and to accomplish all that such an organization should accomplish, will require the united efforts of all the members. I am convinced that one of our needs is a programme committee. We have no executive committee. All the work that would naturally fall to the attention of such a committee has, in the past, generally fallen upon the Secretary. The responsibilities of the Secretary have been too great either for the good of the association or for the member who has had the position to fill. Few of our members realize what the duties and responsibilities of that office are. The expenditure of sufficient time and thought to do it all means a considerable sacrifice to one's own business—more than one can afford, and hence the association's interests are to a certain extent neglected. This committee might be known as an executive committee, or as a programme committee. It should be made responsible for all arrangements for the meetings—place of meeting, programme, etc. It should

also be authorized to use any money in the treasury, for purposes connected therewith, as in their best judgment would be profitable to the association. In closing, I desire to express to the members of the association my sincerest appreciation of their kind friendship and the ever courteous treatment that has, without exception, been extended to me during all the long period that I have acted in the capacity of Secretary. You have kindly overlooked my errors, and given me only encouraging words for the humble, but earnest efforts I have made to serve you. Again thanking you, I submit the above as my report.

"Respectfully,

"JNO. E. BROWN, *Secretary.*"

The report was accepted, and discussion followed.

Dr. Gibson spoke regarding the work of the Secretary, and thought the members should take more interest in the way of writing papers and helping to make the meetings interesting; said it is worth the effort as a schooling; brightens us up on these subjects. Did not believe the committee spoken of would do much good. Thought the Secretary would still have the work to do. Believed an appropriation should be made by which the Secretary might employ a stenographer to do some of the work.

Others favored appropriating a certain amount for stenography hire, thus aiding the Secretary in his work.

Dr. Niles moved that \$25 be annually appropriated for the Secretary's use. Dr. McLeod seconded. Voted and carried.

The report of the Treasurer was then given, showing total receipts since last meeting, \$73.75; balance in hand at that time, \$28.83; total, \$102.58. Itemized expenditures, \$30.73, leaving balance in hand, January 10, 1900, \$71.85.

Moved by Dr. G. A. Johnson that the chair appoint an Auditing Committee of three, and that the Treasurer's report be referred to them. Voted and carried. The chair appointed Drs. G. A. Johnson, W. B. Niles, and C. J. Hinkley as an Auditing Committee.

Dr. Niles reported as committeeman on speakers for Farmers' Institutes; said he had done considerable work without very definite results; a few speakers had been placed, but as a rule the institute preferred to spend their money to get some one to lecture to them on other subjects. On motion the report was accepted and the committee discharged.

Dr. Talbot, as chairman of Committee on Disease and Treatment, made a verbal report, referring to infectious abortion,

cornstalk disease, parturient paresis, black leg, actinomycosis, and these subjects were discussed by other members.

Dr. D. H. Miller used the bi-chloride solution treatment in one herd afflicted with infectious abortion, and the result was very satisfactory. Later the trouble began again in the same herd, and the treatment was again applied, but to no effect.

Dr. McLeod used 3 iv doses of a two per cent. solution of carbolic acid, orally for ten days, resulting successfully.

Dr. I. F. Miller used carbolic acid orally in one herd for ninety days—not successful.

Dr. Talbot reported one success and one failure with the carbolic acid solution treatment.

Dr. Niles reported several cases that did well with the acid treatment, given once daily, and gradually increasing the dose until one-half ounce was given at a time. He thinks the disease is on the increase, and every possible effort should be made to learn something definite about it.

Dr. Repp gave a history of some investigations that have been carried out concerning the bacillus of infectious abortion; thinks probably the germ has been found.

Dr. S. H. Johnson took up discussion on cornstalk disease. He gave reasons for thinking that the ptomain, or whatever it is, does not abound in the stalk, but in the imperfectly formed ears or "nubbins."

Discussion followed by Drs. Hammond, Gibson, Hinkley, Stewart, Austin, Heck, and others. Dr. Johnston thinks it is a good idea to feed flax meal when the cattle are turned into fresh fields of stalks. On motion of Dr. Hammond the committee was continued another year.

The Committee on Sanitation (Dr. Niles, chairman) then reported, and discussion followed on the subjects of state laws, tuberculin tests, control of contagious diseases, etc., and was taken part in by Drs. Repp, Stalker, Gibson and others.

Dr. S. Stewart, of Kansas City, was present, and on being introduced gave a very interesting talk on "Some Parasites Affecting Swine." He referred to the kidney worm (*stephanurus dentatus*) and tracheal or lung worm (*s. paradoxus*). He thinks two per cent. of the hogs west of the Ohio River are affected with *trichina spiralis*.

After discussion on these subjects the meeting adjourned until 7.30 P. M. for supper.

Evening Session.—Meeting was called to order at 8 P. M. by President Shipley.

A report of last year's clinic was made by Dr. Talbot, briefly as follows: Radical operation for hernia, unsuccessful; operation on quittor, successful; operation for double stringhalt, successful on one side; division of cunean tendon for spavin, lost sight of; operation on cryptorchid, successful. Discussion followed on the subjects of hernias, sutures, stringhalts, neurectomy, etc.

Dr. Heck opened the discussion on azoturia, and some time was given to the subject.

Dr. G. A. Johnson gave the *modus operandi* for treatment of scirrhus cord. Two washings with creolin solution, then dissect out the tumor; pack the cavity with surgeon's gauze, using two drams each of boracic acid and acetanilid. The after treatment consists of daily cleansings by turning the water from the hydrant through the wound. He thinks that in dressing the cavities of all large or deep wounds large quantities of boracic acid and acetanilid should be used.

Dr. Johnson also reported a case of colic which had been given tr. opii, $\frac{3}{4}$ iii, and ol. peppermint, $\frac{3}{4}$ i, in a douche. The colic ceased, but enteritis supervened, and the horse died. The question was raised, was it the oil of peppermint in that quantity that produced the enteritis? Also on post-mortem in this horse was found a rupture in the pericardial sack—apparently of some time standing. He then learned that several days previous to this attack of colic the horse had run away, and he believed the rupture had occurred at that time.

The Auditing Committee then reported having checked up the Treasurer's accounts and found them as given in his statement. The report was accepted and the committee discharged.

Some further arrangements were then made for the next morning's clinical demonstrations, and the meeting adjourned to meet next morning at 9 o'clock at Dr. Talbot's hospital.

Jan. 11, 1900.—This forenoon was given to the clinics, and a general interchange of ideas concerning methods employed in veterinary surgery—special and general. The following operations were made: For quittor, abscess or fistula in sacro-coccygeal region; caudal myotomy; removal of clitoris; radical operation for hernia, using silver wire suture.

Afternoon Session.—Meeting called to order by President Shipley. Secretary called attention to the fact that in 1898, Dr. W. A. Heck, who had for some time been an active member of the association, engaged in B. A. I. work, and being assigned

to duty outside the State he was elected to honorary membership—such membership to continue as long as he remained a non-resident of the State. That he had again become a resident practitioner, and some action in the matter was probably advisable. The Doctor was present, and, signifying his desire to again become an active member, on vote the request was granted.

Discussion then followed concerning tuberculin, tuberculin tests and fees for making same.

Dr. Brodie, of Cedar Falls, then read a paper on "Acute Indigestion." Discussion followed regarding the use of barium chloride in such cases, trocar and canula, stomach tubes, tapping stomach, abscesses, the result of the use of trocar and canula, etc.

Dr. Malcolm, of New Hampton, read a paper on "Some Diseases of the Oesophagus." Discussion followed regarding the rubber tube and warm water for unchoking animals. Several of the members have seen good results, ordinary three-fourth-inch garden hose being used.

Dr. Hal. C. Simpson, of Denison, read a paper on "Barrenness in the Larger Domestic Animals." Discussion followed.

Dr. Simpson thinks impregnators very serviceable in cases of constricted os. Concerning artificial impregnation in general he favors the capsule method.

Dr. Malcolm spoke concerning cows that are "frequent bullers"; his advice is to let them go over certain periods without service.

Dr. Hazlet, through some mistake, did not have his paper on "Neurectomy *versus* Treatment," but gave a short talk on the subject, taking the ground that the operation of neurectomy is frequently practiced unnecessarily. A sort of general *pro* and *con* debate followed.

Election of officers was then made the order, and resulted in the election of

President—Dr. J. H. McLeod, Charles City.

First Vice-President—Dr. C. E. Stewart, Chariton.

Second Vice-President—Dr. D. H. Miller, Harlan.

Secretary-Treasurer—Dr. J. E. Brown, Oskaloosa.

Board of Censors—Drs. J. J. Repp, Ames; G. E. Noble, Osage, and H. L. Stewart, Oakley.

The retiring President then thanked the members for honors and favors and Dr. McLeod took the chair.

Dr. Gibson, as Chairman of Committee on Resolutions, reported the following:

With reference to the Veterinary Department of the State Agricultural College:

WHEREAS, The conditions in prospect for the Live Stock Industry of this country indicate an increasing demand for qualified veterinarians, and an increase in the number of students which will seek an education in veterinary science, and

WHEREAS, The above-mentioned conditions suggest the necessity of a thorough course of scientific training at the veterinary colleges; be it

Resolved, That it is the sense of the Iowa State Veterinary Medical Association that the faculty in the Veterinary Department of the Iowa Agricultural College be increased sufficiently to serve the best interests of all students who attend, to command recognition from State Veterinary Boards, to make the graduates therefrom eligible to membership in any and all veterinary associations in this country; and be it

Resolved, That it is the sense of this association that in the fulfillment of these requirements it will be necessary to increase the faculty of the Veterinary Department by the addition of one professor. And be it

Resolved, That this association earnestly request that the change be made, and that the members of this association use their influence to induce the trustees of the college to take such action as may be necessary to give the graduates from the Veterinary Department the standing above referred to.

WHEREAS, Through the death of Dr. C. H. Whitwell this association and the veterinary profession loses an honored member, be it

Resolved, By the members of this association, that while we deeply feel the loss sustained, we meekly bow in submission to the will of the All-wise Father whose call we must all obey.

Resolved, That we tender to Mrs. Whitwell our heartfelt sympathy in the hour of her sad bereavement, and while she mourns the loss of a dutiful husband, we mourn the loss of a professional brother.

Resolved, That we appreciate and extend a vote of thanks to Dr. Talbot for the generous clinic furnished, and that the Treasurer be instructed to reimburse him for any expense incurred in the matter from the association funds.

On motion by Dr. Shipley a vote carried to adopt the resolutions as read.

Dr. Koto, as chairman of Committee on United States Army Legislation, reported the following resolution, which was adopted:

WHEREAS, It is essential for the highest efficiency of the army, for the honor and standing of the veterinary profession, and for the humane treatment of the army horses, that an efficient veterinary service be established in the United States Army,

Resolved, That it is the sense of the Iowa State Veterinary Medical Association that we earnestly request that our Representatives and Senators in Congress use their influence to organize an independent Army Veterinary Corps that will be a credit to our nation; that a veterinary director be provided; that the service be extended to the artil-

lery and the transportation departments; that the veterinarians already provided for shall bear the rank of second lieutenant; that the Veterinary Corps shall carry its own line of promotion.

Resolved, That a copy of these resolutions be sent to each of our Representatives and Senators in Congress.

The Judicial Committee reported the outline of a bill to regulate the practice of veterinary medicine, surgery and dentistry in the State, such as they favored an attempt to get through the State legislature this year.

The report was adopted and the chair instructed to appoint a committee of three, of which Dr. Koto should be chairman, to act as a legislative committee. The chairman then made up the committee as follows: Drs. P. O. Koto, chairman, J. I. Gibson and J. J. Repp.

By vote it was decided that the office of Judicial Committee should be continued.

Committees were then appointed as follows:

Judicial—President and Secretary; Drs. P. O. Koto, J. I. Gibson and H. E. Talbot.

Sanitation—Drs. W. B. Niles, S. K. Hazlet and P. Malcolm.

Moved by Dr. Simpson that we adjourn, subject to the call of our President and Secretary for the holding of our next annual meeting. Seconded by Dr. Miller. Voted and carried.

JNO. E. BROWN, *Secretary*.

WESTCHESTER COUNTY VETERINARY MEDICAL SOCIETY.

The annual meeting was called to order at the Fifth Avenue Hotel, Mt. Vernon, May 10, at 9 P. M., Vice-President Morrison in the chair and ten members present. After the usual reports of committees, etc., a motion was made and carried to have properly signed and sealed suitable resolutions of thanks to Profs. Doremus, Grange, Freeman and the Hon. James Wood, for their valued assistance at the public meeting held in Yonkers on March 27.

On motion it was resolved that the Vice-President appoint a committee of three members to draw up suitable resolutions of condolence upon the death of President M. J. Tewey, D.V.S., to be spread upon a memorial page of the society records; also that a copy be published in the several county papers, and one be engrossed and sent to the family.

The following resolutions were then adopted:

WHEREAS, The Divine Creator has, in his infinite wisdom, called

from his earthly labors and from an association amongst us, never to be forgotten, our beloved, revered and honored President, Martin J. Tewey, D.V.S., and

WHEREAS, This Society suffers a loss that will be greatly felt by us, we are greatly comforted in the certain assurance that it was for his great good, and as well that he goes to that promised reward which he so richly deserved, and

WHEREAS, It was known to all who had met him that he led an exemplary life, was an honored citizen, possessed only of those attributes of a true and good man, was modest, of cheerful disposition, generous to a fault, an incessant worker for the welfare of mankind as well as that of the animal, whose care was his careful study, of noble character and loyal to the best interests of all, be it therefore

Resolved, That this Society, who greatly and reverently mourn his loss as a valued member and companion, do, as a token of the love and esteem in which he was held, tender to his family our deep and heartfelt sympathies in this their hour of affliction, and may He who doeth all things wisely and well comfort and protect them; and

Resolved, That a copy of these resolutions be spread upon a memorial page of the records of this Society; a copy published in the several county papers and a copy transmitted to the family of our late member.

Vice-President Morrison stated that this was an annual meeting and the election of officers for the ensuing year was in order. By ballot the following were elected:

President—W. B. Moorhouse.

Vice-President—R. R. Morrison.

Secretary—R. C. Jenks.

Treasurer—C. H. Martin.

Trustees—F. P. Dorian and J. S. Lampkin, 3 years; F. O. Wright and J. M. Laffan, 2 years; G. S. Bennett and E. Sat-tourell, 1 year.

On motion adjourned. R. C. JENKS, D. V. S., *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The New York State Veterinary Society occupies in various ways a unique place in the veterinary profession of America.

The Empire State contains far more regularly qualified veterinarians than any other in the Union, and the State society is the visible and legal representative of this great body of practitioners.

The association nominates two candidates for each vacancy on the veterinary examining board, one of whom is appointed to the place, so that the members present at the meeting when nominations are made virtually fix the character of the license examinations by the character of the candidates nominated.

The character of the profession in the State is thus placed in the hands of the veterinarians themselves and the influence of each veterinarian upon his profession can only be exerted in due measure through the association. The responsibilities of New York veterinarians to the State society and to the profession thus become practically identical.

The laws relating to veterinary education and practice in New York are in advance of those of any other State, both in general and professional requirements. New York is the pioneer in veterinary education in the United States; her colleges are the oldest, their alumni the most numerous, and the college buildings and equipment the most complete.

It becomes the duty of the veterinarians to make and maintain the State society first among the States, and the responsibility belongs to all veterinarians alike, whether members of the society or not.

It is hoped and intended that the approaching State meeting at Ithaca will begin a new era in the society's usefulness.

President Bell says make the invitation universal; "let all be invited who have ears to hear," which can only be interpreted to mean that there should be a large gathering of the profession.

The Committee of Arrangements will make it worth while for everybody to attend. The committee has three objects in view, each of which it purposes making an unqualified success.

First: It is to be a great educational meeting, where each veterinarian will get something of value which he can carry home and use. The committee will secure plenty of brief interesting papers of every-day value, which will evoke all the discussion the time will permit. The members can be assured that it will not be necessary for county secretaries to present long reports in order to kill time. Clinics will be made a predominant feature. Operations will be performed by leading veterinarians, and they will be largely along the line urged by Dr. Cowie, of Ogdensburg—that is, the more common and practical operations by the best and simplest methods, so that each member will receive helpful suggestions. The committee will furnish abundant material and all needed conveniences, and will give special attention to anæsthesia and antiseptics.

Second: It is to be preëminently a professional reunion where all veterinarians, whether non-members, ex-members or members, shall constitute one harmonious body, and each enjoy the same benefits of instruction.

Third: The meeting will have its social side. Visiting veterinarians will be pleasantly cared for throughout the meeting and the committee will provide special entertainment for the evening of the first day. Ample provision will also be made for the entertainment of visiting ladies. Picturesque Ithaca, with the exceptionally attractive campus of Cornell University, should induce a large number of ladies to attend. Veterinarians having papers or case reports to offer or who are willing to take part in the clinical demonstrations or who have any suggestions to offer in reference to programme are urged to communicate at once with the Secretary, Dr. C. D. Morris, Binghamton, or the chairman of Committee of Arrangements, Dr. W. L. Williams, Ithaca.

If any veterinarian, be he member or not, is specially interested in any subject or operation and will communicate his wishes, the committee will accommodate him as far as possible. It is to be everybody's meeting.

W. L. WILLIAMS,
Chairman Committee of Arrangements.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The REVIEW is pleased to announce that every prospect is bright for a most successful meeting in September. From a letter of Secretary Stewart, dated June 25, the following facts are taken:

"The details of the preparation for our meeting to be held in Detroit are nearly completed, and the promises made in a circular letter issued several weeks ago will be more than fulfilled. The veterinarians of Michigan, Ohio, and Indiana are saying that they appreciate the holding of this meeting in their midst, and will attend in full force. Communications received from several other States indicate a large attendance.

"The veterinarians of Detroit are taking a lively interest in the coming meeting and are a unit in a determination to make good the reputation of Detroit as a convention city, and are anticipating with much pleasure a visit with members of their profession from all parts of the continent.

"The program as planned will provide ample time for presentation and full discussion of all papers and reports, as well as abundant time for clinics, and leave opportunity for social pleasure."

The following is a partial list of the papers to be presented, and are in addition to those announced in the June REVIEW:

"The Relation of Veterinary Medicine to the Public

Health," by Dr. Wm. Herbert Lowe, Paterson, N. J.

"The Etiology and Treatment of Spavin," by Dr. W. J. Martin, Kankakee, Ill.

"Inoculation against Texas Fever," by Dr. John W. Conaway, Columbia, Mo.

"Snakes, Venoms and Antidotes," by Dr. E. W. Ranck, Philadelphia, Pa.

"Difficulties found in Enforcing the Law requiring Tuberculin Test," Dr. Austin Peters, Boston, Mass.

"Difficulties in the Way of Municipal Meat Inspection in the South," Dr. C. A. Cary, of Auburn, Ala.

There will be three sessions of the surgical clinic, of 2 1/2 hours each, affording ample time for the demonstration of numerous operations, including those for relief of roaring, cribbing, wry-tail, shoe-boil, lameness, and dental diseases; anti-septic ridgling castration, etc. Among those who will take part in the clinic are Prof. L. A. Merillat of Chicago, Prof. W. L. Williams of Ithaca, Prof. W. L. La Baw of Boston, Prof. John W. Adams of Philadelphia.

A central location, a beautiful city, a delightful climate, a generous hospitality, an attractive program, cheap transportation, and, above all, general professional prosperity conjoin to assure us that the Detroit meeting of the American Veterinary Medical Association will be the greatest in its history.

THE ALUMNI ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE elected the following officers for 1900-1901: President—R. W. Ellis; Vice-Presidents—W. H. Lowe, H. D. Hanson; Secretary and Treasurer—F. R. Hanson, 160 Eldridge St., New York. The association will be continued as of old, but this will not prevent the natural formation of another association consisting of any or all alumni of the Veterinary Department of New York University.

NEWS AND ITEMS.

DR. P. D. BRAY, of Columbia, Tenn., is in South Africa.

A CORRESPONDENT writes that there is a good opening for a veterinary surgeon at Sidney, Ohio.

PROF. JAMES L. ROBERTSON, of New York, has recently been travelling through the West.

WE hear that Prof. M. Stalker has ceased to be the head of the Veterinary Department of the Iowa Agricultural College.

DR. WM. FRETENBERGH, of New York City, has accepted the assistantship to Dr. T. S. Childs, of Saratoga Springs, N. Y., for the season of 1900.

DR. H. A. MEISNER, of Baltimore, has been appointed State Veterinarian of Maryland, to succeed Dr. Clement, who has held the position for a number of years.

DR. H. L. RAMACCIOTTI, of Omaha, Neb., has received the appointment of food inspector for that city for a term of three years.

DR. C. F. DAWSON has severed his connection with the Bureau of Animal Industry and associated himself with the well-known drug house of Parke, Davis & Co., of Detroit.

THE HORSELESS AGE.—Tommy: "Paw, what is the horseless age?" Paw: "Eight years, as horses never get past seven."

DR. HUGH THOMSON, Shabona, Ill., writes the REVIEW that he can direct two qualified veterinarians to good locations for practice, and invites correspondence.

DR. C. O. DURFEE, of Palmyra, N. Y., has recently been appointed to the Federal Meat Inspection force at Buffalo, and assigned to post-mortem work.

DR. T. W. SCOTT, of Clarksville, Tenn., has accepted an appointment as Meat Inspector in the Bureau of Animal Industry and has been assigned to duty at Kansas City.

DR. B. P. WENDE, in connection with his governmental duties at the N. Y. Central stock yards of Buffalo, lends valuable aid to the S. P. C. A.

DR. L. A. ROBINSON, of Buffalo, has found the bee industry to be a most pleasing and profitable pastime and his apiary has rapidly grown to considerable dimensions.

DR. J. M. JOHNSON, M. R. C. V. S., of London, England, is stationed at Buffalo, and exports to the former city a regular weekly consignment of horses.

DR. T. A. BOWN has found the traffic in horses more pleasing to his taste than that of the practice of medicine. So the genial doctor is regularly seen with his consignment of horses at the weekly horse sales at Buffalo.

"ENCLOSED please find check for \$6, as subscription to Vols. 23 and 24 of the REVIEW. The longer I take it, the more eagerly I look for it each month. With best wishes for a prosperous year."—*E. L. Volgenau, New Haven, Conn.*

"THE REVIEW grows better every year. I look for it each month with pleasure, as each copy is sure to contain in-

formation that is of great value to a country practitioner."—*J. M. O'Reilly, M. D. C., Merrill, Wis.*

DR. J. H. MCNEILL, recently of the B. A. I. force at Buffalo, N. Y., has been transferred to Ogden, Utah, where he goes to do special work in the eradication of scabies in sheep in the herds of Northern Utah and Southern Idaho.

"I WOULD not be without the REVIEW for twice the amount I pay each year. I consider it the best veterinary journal printed in the United States.—*E. M. Beckley, D.V.S., Meriden, Conn.*

NEW BOARD OF EXAMINERS FOR NEW YORK.—The Regents of the University of the State of New York made the following appointments of examiners on June 25: Drs. George H. Berns, F. L. Kilborne, Charles Cowie, John A. Bell, and Claude D. Morris.

DR. PAUL GIBIER, director of the New York Pasteur Institute, died on June 12th. He studied for two years under the late Louis Pasteur, and removed to New York about twelve years ago, establishing the institute which has achieved considerable reputation throughout the country.

PINKEYE has been so prevalent in and around Denver, Col., that there was talk of abandoning the racing meeting scheduled for Overland Park last month. Only a very few horses were entered in the races, and the runners were as scarce as the harness performers. Much loss has been sustained by owners of horses of all sorts, the disease having resulted fatally in very many cases.

HORSES AND VALUES.—Government statistics show that the decline in horse values in the United States from 1892 to 1896 amounted to the appalling sum of \$500,000,000. Those who thought the bursting of the boom was but a small affair can ponder those figures. Since 1896 the increase in horse values amounts to over \$100,000,000, with a decrease of nearly 2,000,000 in the number of horses.

MRS. HARBAUGH, widow of the late Dr. W. H. Harbaugh, of Richmond, Va., placed a small advertisement in the REVIEW, offering for sale the ambulance used by her husband. She writes us to stop the advertisement, as she has been simply besieged by letters of inquiry, and saying that Dr. James T. Glennon, of Newark, N. J., had gone down to Richmond and purchased it. Moral: If you wish to reach the veterinarians of America, advertise in the REVIEW.

DR. W. HORACE HOSKINS, of Philadelphia, graduate of the

American Veterinary College, class of 1882, was in attendance upon the commencement exercises of the New York-American Veterinary College, at the Metropolitan Opera House, New York City, June 7, he never having missed paying this tribute to his alma mater since his own graduation, this being the nineteenth pilgrimage he has made to similar events. At the annual alumni dinner he is always to be seen, where his voice is ever raised in honor of the old school.

SOME WEEKS ago the engineer of an automobile turned his ungainly rig onto the New York Speedway, and set out to enjoy himself. The mounted police at once set sail for the intruder and soon caught him, but after it had been stopped the "thing" refused to "get up" again and was stalled on the big drive for more than half an hour, causing two or three serious runaways among the high spirited horses passing its uncouth shape. Finally connection was established among the numerous wires, the electricity flowed on its proper course and the big machine trundled off the speedway, escorted by a big guard of police—*Breeder's Gazette.*)

A CURIOUS ACCIDENT resulting fatally to man and horses is reported from Syracuse, N. Y. A horse attached to a light speeding wagon ran away, apparently grew crazy and in his mad flight jumped neatly into a large express wagon being driven soberly along the street. The impact of the flying horse killed the driver of the express wagon dead on the spot, and the unusual sensation caused the steady old horse to also run away. The jolting of the heavy springless wagon was apparently more than the horse in the wagon as a passenger could stand, so he made a flying leap out over the dashboard. Both went down in a heap and when things were sorted out and straightened up it was found that both horses were so badly damaged as to necessitate the ending of their sufferings by merciful shooting, which was forthwith attended to by the policeman on hand.

ALKALOIDAL GRANULES IN CANINE PRACTICE.—One of the problems in the treatment of dogs and other small animals is the administration of medicines. Many of such patients are so rebellious when an attempt is made to give liquid medicines, that the struggle excites the patient and endangers the administrator, and where repeated doses are necessary it is usually abandoned after a few such experiences. Pills prepared after a prescription are often bulky and difficult to give, frequently being soft and sticky, besides entailing loss of time and incurring

considerable expense. To overcome this lack of efficient medication, the Abbott Alkaloidal Company, of Ravenswood Station, Chicago, have introduced to the veterinary profession a series of popular alkaloids and concentrated medicines in granule and tablet form which are a real boon to the canine prescriber. They can be carried in a neat little pocket case in sufficient variety to meet the demands of almost every kind of case; a dose may be administered by the practitioner at the time of his visit as an object lesson to the person whose duty it will be to continue them, and, by charging a reasonable price for them a profit will fall to the veterinarian instead of the druggist. They advertise these tablets elsewhere in the REVIEW, and offer to supply veterinarians with samples for trial. We think their reliability and facility of administration will commend them to those whose practices bring them many of the smaller animals to treat.

FOR SALE OR TO LET,

A Veterinary Practice, consisting of a well-established Hospital, situated in one of the most celebrated towns in America. The right man ought to easily do a business of at least \$5000 a year, as the present owner has averaged \$7000 a year for ten years. The hospital contains 10 large standing stalls, and 3 big box stalls; a very large carriage-house, operating room, office, medicine room, and seven nice large living rooms over the office, with all up-to-date improvements, and a very nice up-to-date ten-room cottage; all property in first-class condition. A grand chance for the right man. Terms for sale or lease will be made satisfactory. Population 18,000; for about four months it is from four hundred to six hundred thousand. No other qualified Veterinarian in the county. Address C. S. T., care AMERICAN VETERINARY REVIEW.

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REVIEWS FOR EXCHANGE.

I have these duplicates: Vol. XVIII, July (1894); Vol. XV, April and May (1891). I need the following: Vol. XIX, September and October (1895); Vol. XVII, January (1894). Would like to exchange with some one having duplicates, etc. HUGH THOMSON, V. S., Sharbona, Ill.

NOVEMBER, 1894, REVIEW WANTED.

To complete my file I would like to secure No. 8, Vol. XVIII of the AMERICAN VETERINARY REVIEW. Any one having an extra copy of that number please address H. D. STEBBINS, V.S., West Winfield, N. Y.

BACK NUMBERS REVIEW FOR SALE.

Volumes 2, 4, 8, 9, (complete); April, '79, '81, '82, '83; May, '79, 81; June, '79, '81; July, '79, '81; August, '79, '81, '83; September, '79, '81, '83; October, '79, '81; November, '79, '81, '83; December, '81, '82, '83; January, '80, '82, '83, '84; February, '80, '83, '84; March, '83, '84.

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